A Lecture
ON
SKIN RASHES IN CHILDREN.

DELIVERED AT THE MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.

BY

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THE nomenclature and classification of skin diseases has always been a more or less well deserved subject of reproach to dermatologists, and even at the present day there are still grounds for criticism. The old-fashioned grouping of skin diseases, according to their anatomical appearances, into papular eruptions, vesicular eruptions, and so on, had the merit of simplicity, but it grouped together diseases which are entirely dissimilar without giving any indication of their nature or causation. Modern classifications which try to group all skin diseases according to their origin—microbic, parasitic, nervous, or otherwise—are perhaps a step in advance; but the weakness of such classifications is that there is a considerable number of skin affections to which no place can be assigned, and which must therefore come under the heading of unclassified diseases. This applies even in such a small branch of dermatology as the rashes of children, and I shall therefore only deal with some of the common rashes which you are constantly meeting with, and call attention to some of their less common features, without any formal attempt at classification.

A medical man in active practice must necessarily have an acquaintance with the ordinary rashes of children, and especially a more or less accurate knowledge of the eruptions of the acute specific fevers. And yet mistakes are sometimes made, and I have seen a belladonna rash diagnosed as scarlatina, a bullous urticaria as varicella, a copaiba rash as measles, a pustular syphilide or an impetigo contagiosa as small-pox, while on the other hand I have known a case of typhoid fever with prominent intestinal symptoms sent into hospital as a case of appendicitis for immediate operation, a well-marked rose-red rash having been overlooked.

Even in the case of diseases so commonly met with as these there is often good excuse for a wrong diagnosis by any one who is not a skin specialist. Such is especially the case when the exanthem is not accompanied by any well-marked constitutional symptoms, and there is no history of the patient having been exposed to infection, or when the eruption is anomalous or coexists with some antecedent skin disease for which the patient is already under treatment. Of course these ill-defined, mild forms of zymotic disease are a great danger to the community, and may, if unrecognized, mean almost ruin to small private schools, and even to much larger institutions, when an epidemic has been allowed to originate and spread unchecked. Some of the contagious diseases, such as ringworm, even in the old days, before the universal use of *x* rays, were capable of producing almost as great a scare in small boys' schools. Ringworm is, however, becoming rare among the better classes, but again this summer I have seen cases of tinea cruris in boys from one of our best known public schools, where the disease had been allowed to spread through the carelessness of the school authorities.

Although the general characteristics of the infectious fevers are well known, it may not be out of place to call attention to some of their less well-defined and anomalous characteristics. In scarlatina the invasion is usually sudden, and in children may be marked by the occurrence of convulsions. The temperature rises rapidly, and may in the course of a few hours reach 102° or 103° F. The fever does *not* diminish after the appearance of the rash, which occurs during the first twenty-four or forty-eight hours, and is marked by exacerbations in the evening and remissions in the morning. In fatal cases hyperpyrexia with a temperature of as much as 108° occurs, and is accompanied by delirium or nervous depression. The rash makes its appearance first on the trunk, and spreads from the chest and abdomen to the arms and thighs and legs, but the face may escape entirely. To the touch there is often a feeling as of minute elevations in the neighbourhood of the hair follicles, but the punctiform appearance of the rash may be well marked even when the skin feels quite smooth. The rash is usually said to be scarlet, but is really of rather a deeper and duller tint, and in severe cases is accompanied by minute haemorrhagic spots which disappear on pressure. Another abnormality of the exanthem is the occasional excessive prominence of the papular lesions, which give the rash rather the appearance of that of measles than scarlet fever. Again, in some cases at the height of the eruption very numerous small vesicles make their appearance at the anterior axillary folds, or on the chest and abdomen, and these vesicles are found to contain a minute drop of cloudy fluid. On the other hand, in some instances the rash is so indefinite that it is entirely overlooked or misconstrued, and cases are said to occur in which the rash is entirely absent and the disease only recognized by subsequent peeling or albuminuria, or by the occurrence of scarlatina in other members of the family. In most cases, however, there is a certain amount of sore throat, and this is often one of the first symptoms, and may give a clue to the diagnosis when other symptoms are quite indefinite. Some cases of scarlatina are complicated by diphtheria, and in them the Klebs-Loeffler bacillus can, of course, be demonstrated, but it is important to remember that in some 10 per cent. of cases the two diseases coexist.

Mistakes in diagnosis usually take the form either of overlooking the rash altogether or of mistaking it for erythema scarlatiniforme, measles, dermatitis exfoliativa neonatorum, or a drug eruption, especially that caused by belladonna.

Erythema scarlatiniforme may be distinguished by the eruption being less punctiform but more diffuse and uniform, by the greater persistence of the rash and its tendency to recur, and by the absence of throat symptoms.

Measles eruptions are sometimes very like scarlet fever, but in the former the face is involved early, in the latter often not at all. In measles the spots are macular rather than punctiform, with a tendency to a crescentic outline, due to small portions of normal skin intervening between the irregular erythematous areas. Moreover, the rash of rubeola is preceded by four days of catarrhal symptoms, and may be accompanied or preceded by the appearance of small bluish-white spots situated on a red base on the buccal mucous membrane opposite the molar teeth. Dermatitis exfoliativa neonatorum is a rare form of pemphigus neonatorum, due to streptococcal infection, and characterized by definite desquamation over considerable areas, which is seldom accompanied by the sore throat, fever, and albuminuria of scarlatina, and, with reasonable care, should not be mistaken for it.

Drug eruptions, and especially belladonna rash, are sometimes of an erythematous character, which closely simulates scarlatina, but they are less punctiform in character, more diffuse, are unaccompanied by the sore throat and constitutional symptoms of the infectious fever, and are frequently associated with dilatation of the pupil and a pricking sensation of the affected skin.

A rash very similar to that of scarlet fever sometimes makes its appearance as a prodromal eruption in small-pox, and especially in the milder forms of the disease. It is scarlatiniform in character, but only of short duration, and generally disappears within forty-eight hours. This rash generally shows itself on the second day, when the constitutional symptoms of headache, vomiting, and pain in the back are well marked. The small-pox rash, of course, makes its appearance on the third day of illness, and then these symptoms often diminish or disappear. Of the appearances and characteristics of the typical small-pox eruption I do not propose to say anything, as it is sufficiently familiar, but every one is not equally well acquainted with some of its anomalous forms. Of these the most unfavourable to the patient is the appearance at the end of the incubation period, when the true rash appears or should appear, of a petechial eruption. The petechiae and ecchymoses are not raised above the level of the skin, and at first they disappear on pressure. They may lie in the spaces between the vesicles of the ordinary small-pox eruption, and the fluid in these vesicles then often becomes

stained with blood and the contents haemorrhagic. The petechiae are quickly followed by definite purpuric lesions, of a purple or dark-red colour, which do not disappear on pressure, and are diffusely scattered over the limbs and trunk. The purpuric patches generally spread to the face, which becomes swollen and puffy. The patches sometimes take on a still darker tint, and the pustules contain a mixture of pus and blood. Haemorrhages also occur from the mucous membranes, the patient becomes intensely prostrated, and death almost invariably occurs.

Such severe cases are not often seen nowadays, indeed the tendency of the disease seems to be towards a milder type, and you may remember an epidemic of small-pox in America some years ago in which the mortality among many thousands of vaccinated and unvaccinated cases in the United States during the first three months of 1901 was not much over 1 per cent. This epidemic was of a mildness absolutely unprecedented, and we can only hope that the next epidemic in England, which is certain to come in time, may be marked by an equal want of severity.

The differential diagnosis of small-pox is of some interest, as it is so often mistaken for varicella, pustular syphilis, bromide eruptions, and impetigo contagiosa. The most frequent mistake is to confuse it with varicella. In varicella there are not the same initial symptoms so characteristic of a well-marked case of variola, but the initial symptoms are either absent or so modified in mild cases of small-pox that a diagnosis has to be made from the appearances of the rash. In varicella the eruption consists of distinct vesicles, containing clear fluid, which are unilocular and easily ruptured. They are rather soft to the touch, variable in size, from a millet seed upwards; they may be seen in every stage of development, and first make their appearance on the back and parts of the body covered by clothing. They make their appearance in crops, and in two to four days become covered with a crust, which is brownish in tint, and, when it falls off, leaves a red rather than a pigmented spot, which passes into a very superficial temporary scar. Umbilication is rare, and only occurs from drying up of the central contents.

On the other hand, the small-pox eruption at first consists of hard, shotty papules which show themselves on the face, and afterwards on the trunk and limbs and hands, but most abundantly on the uncovered portions of the body. The papules soon develop into vesicles, and then into pustules with dense, cloudy contents. They are often umbilicated, are multilocular and not easily ruptured, become covered with a thick scab which falls off, leaving a pigmented spot with some amount of pitting. These various changes in the papule usually take place in ten to fourteen days; in mild cases the time may be somewhat shorter.

When the prodromal symptoms are well marked, and the initial eruption abundant and typical, there is little difficulty in making a diagnosis; but in mild, sporadic cases of small-pox all the above points of difference should be taken into account, and, in any very doubtful case, the patient isolated for a few days, when the nature of the illness will make itself sufficiently clear.

A pustular syphilide may, especially when the initial lesion cannot be determined, easily give rise to a suspicion of small-pox. In both diseases there is initial fever, with prodromal joint and back pains and headache, and in both a papular eruption which becomes pustular. But in the syphilide the course of evolution in the rash takes longer. There is more definite induration at the base of the lesions, which are often polymorphous and in places tend to ulceration. The eruption of syphilis comes out in successive crops instead of at one time, and is usually accompanied by sore throat and enlarged supratrochlear or suboccipital glands. Of course, the discovery of a primary chancre, whether of the tonsil, mamma, or elsewhere, would make the diagnosis conclusive. It is hardly worth while to discuss the differential diagnosis from bromide and other drug eruptions, or from impetigo contagiosa, for, with ordinary care, such mistakes should never arise.

In connexion with the prevention of small-pox by vaccination, some rather interesting developments are at times met with in children.

Vaccinia, or cow-pox, when artificially induced in the human subject by inoculation, is, of course, in most cases protective against small-pox, and usually runs a mild and normal course; but it may be of interest to call attention to some anomalous results of such inoculations. Perhaps the most unusual of these is, instead of the ordinary pustule, the formation of a granuloma. This has been described most frequently by American authors. After the vaccine vesicle has been partly developed it ruptures, and the lesion takes on an indurated granulomatous appearance, somewhat allied to that of botryomycosis, which may persist for some weeks without undergoing involution and without marked change in its characteristics. The peculiar fact about such developments of the vaccination vesicle is that they are *not* protective against small-pox. They disappear like an ordinary vaccinia with simple antiseptic treatment, leaving slight scarring.

At the other end of the scale are those very severe reactions which are accompanied by acute phlegmonic inflammation and sloughing and well-marked constitutional disturbance, and, when the lesions become generalized, seriously affect the general health, and may even cause death. Quite apart from the ordinary vesicles which develop as a result of vaccination, and even preceding them, certain skin eruptions may occur as a result of the toxaemia produced by the vaccine virus. The morbilliform rash which is sometimes produced by injecting diphtheria antitoxin is, of course, well known, but the rash which follows vaccination in the first two or three days is rather of an urticarial character, with the usual appearance of this disease, or resembles a local or general erythema or an erythema multiforme. When the rash is of the nature of an erythema multiforme, it may be associated with the presence of vesicles or bullae, but these are only of a transitory character and soon disappear. Most of the bullous eruptions which appear two or three weeks after vaccination are usually forms of bullous impetigo contagiosa, due to a secondary streptococcic infection. A week or so after vaccination, absorption of the virus may produce a purpuric or erythematous eruption, and, as sequelae of vaccination, psoriasis, eczema and other skin diseases have been described, but I think it doubtful how far they have any connexion with the vaccination. I have recorded cases of lupus vulgaris appearing on a vaccination scar, and cases of syphilis and leprosy are also said to have occurred from inoculation of these diseases at the time of vaccination, but again it is impossible to prove that the wound has not become contaminated secondarily. If such cases have occurred, they were unquestionably due to gross carelessness on the part of the operator, and are hardly likely to recur at the present time. Pemphigoid lesions might result from the use of calf lymph, inasmuch as such lesions do occur in cows and might conceivably be conveyed to the human being with the lymph, and cases of acute pemphigus have undoubtedly occurred in butchers and others who have to do with cows, probably as a result of inoculation. True erysipelas, with the typical fever, constitutional disturbance and rapidly spreading inflammation of the skin with a sharp-cut edge, has been said to occur as a result of a mixed inoculation at the time of vaccination, but again it is difficult to be sure how many cases have resulted from secondary infection at some period following vaccination. Generalized vaccinia is of very infrequent occurrence, and more than sporadic cases seldom occur. The eruption is either sporadic, in which case a few vesicular lesions occur around the point of inoculation, or the eruption may become partly or entirely generalized, an extensive pustular rash spreading over the body a week or more after vaccination and continuing to spread for a month or so longer. If very extensive it may cause the child's death.

Epidemic generalized vaccinia is still more rare, but such an epidemic of unusual severity was recorded by Hill and Ross in the *Journal of Hygiene* in 1910. The epidemic involved 426 cases with 31 deaths, and of these cases 363 and 28 deaths occurred in the cool districts of Natal, while 62 cases and 3 deaths occurred in warmer districts. The cases in the epidemic may be classed in three groups:

1. In 20 per cent. a generalized eruption, apparent all over the body from the fourteenth to the twenty-eighth day after vaccination, and, in many cases, after the scab had fallen off.
2. In 75 per cent. secondary vesicles made their appearance round the original vesicle on about the eighth day, followed by

crops in various parts of the body for the next two months, and in certain cases even for three months.

3. In the remainder the eruption followed one of the preceding types, then subsided altogether, to reappear a month or so later, after some ailment or some lesion, such as a burn.

In the first group the eruption appeared as small macules, which were surrounded by a slightly reddened area, but the hard, shotty feeling, which is characteristic of the small-pox papule, was absent. The macules became papular, and in two or three days vesicular umbilication was frequent, and on about the eighth day they became pustular, and secondary fever set in. The eruption appeared also on the mucous membranes of the mouth, gums, palate, and pharynx. The lesions were, as a rule, more abundant on the vaccinated than the unvaccinated area, and were especially well marked on the forehead, neck, and scalp. On the front of the neck the lesions often tended to become confluent. The rash was often extensive on the thighs, less on the chest and back, and still less on the palms of the hands and soles of the feet, and scanty or even absent from the abdomen. The general appearance rather suggested small-pox, the temperature was high, and the children, in severe cases, got gradually weaker and weaker, and died either of exhaustion or some intercurrent affection, such as enteritis, bronchitis, or bronchopneumonia. Death occurred usually in the later stages of the disease, some as early as five weeks after vaccination, some as late as three months.

A calf was inoculated with some lymph from the vesicle on one of the children's feet, and typical but not very extensive vesicles resulted. The lymph was obtained from one source only, and about 75 per cent. of the individuals who suffered were vaccinated from a packet of tubes bearing one number, which would seem to indicate that the contents of the packet came from one calf. The total amount of lymph, however, was taken from six calves, and this would seem to indicate a particular factor inherent in the strain of lymph rather than in the reaction of any particular calf.

I have already drawn attention to the fact that nearly six times as many cases occurred in the cool districts of Natal as in the warm, and this may perhaps be accounted for by some change which took place in the lymph when exposed to a higher temperature.

So far I have dealt with diseases which are well recognized as infectious, but I shall now say a few words about a skin disease which is not more than mildly contagious, but of which I seem to have seen more cases last summer than usual. I mean pityriasis rosea.

Although a well-marked case of this disease is fairly straightforward and easy of recognition, the less well-defined cases may easily be mistaken for seborrhoeic eczema, psoriasis, tinea circinata, or the maculo-papular scaly syphilide. The eruption is sometimes discrete, frequently confluent, irregular or circinate in outline, slightly raised or scaly, and of a pale pink or reddish colour. The patches are most abundantly situated on the trunk, and may not number altogether more than twenty or thirty, or they may cover practically the whole of the chest, abdomen, and back, and also be present on the limbs. They vary in size from a pea to an inch or more in diameter, and may either attain their full size and number in a few days, or increase slowly during a period of a week or two, showing themselves irregularly one after the other or in several distinct crops. Some of the larger patches spread peripherally and clear up in the centre, so as to form circinate lesions of varying size, becoming, as they tend to fade, of a salmon-pink colour. After the rash has been present several days, some such circinate patches are generally found, very slightly raised above the surface, but with a well-marked scaly surface. Small patches often tend to coalesce, to form larger lesions, which again clear up in the centre and spread peripherally. The face is rarely involved, but the neck, chest, arms, and thighs all tend to be affected. Subjective sensations are uncommon, and at the most there is slight itching when the patient gets at all hot.

A peculiarity of the disease, which is quite characteristic, is the appearance in many cases of a so-called "herald patch," which is larger than the other subsequent patches, and precedes them by a week or ten days. It is of the same colour as the succeeding generalized eruption, but may be more well defined and somewhat more scaly. The disease is almost equally common in both sexes, and may appear at any age; it is said to be less frequent in individuals of dark hair and complexion, but I am not myself convinced of this.

Although no ringworm fungus or other parasite has ever been found in the disease, it is, as I have already stated, in my opinion undoubtedly parasitic, and probably mildly contagious, inasmuch as more than one case in the same family has been recorded by several observers. Microscopic examination does not help us much, except to show the absence of ringworm fungus, and a diagnosis cannot be made from microscopic sections alone. But apart from the absence of ringworm fungus in the scrapings, a distinction from tinea circinata can often be made clinically from the fact that the lesions of pityriasis rosea are rarely so circular as those of tinea circinata, and the peripheral border is not so sharply marginate, while the centre does not tend to clear up so thoroughly as in cases of body ringworm. Also, the lesions of tinea circinata are much more frequently found on the face than those of pityriasis rosea.

In psoriasis the distribution is also different, and the elbows and knees and scalp are much more frequently affected, the scales are thicker and more adherent, and the edges of the patches are sharper and more defined.

Seborrhoea may closely simulate pityriasis rosea, but the scalp or eyebrows are frequently involved in seborrhoea, the scales are more greasy, and its evolution is slower.

The maculo-papular syphilide, for which pityriasis rosea is so often mistaken, differs in that there is more definite infiltration, the lesions are somewhat darker in tint and occur more frequently on the palms and face, while there is usually corroborative evidence of syphilis to be found elsewhere.

As regards treatment, a soap and water bath every day, or, if there is any itching, a starch or alkaline bath, should precede the application of any lotion or ointment. An excellent lotion may be ordered of glycerini acidi carbolici ♏x, sodii bicarb. gr.x, boracis gr.v, aq. dest. ad ℥j; or liq. sodae chlorinatae ♏xxx, spt. lavand. ℥ij, aq. dest. ad ℥j. If an ointment is preferred, a weak sulphur or salicylic ointment, containing 15 grains of either or both to the ounce of vaseline, may be ordered; or an ointment containing yellow oxide of mercury and resorcin may be made up with lanolin and lard. Under such treatment the disease tends to disappear in about a month.

Many even of the common rashes which occur in children have been of necessity omitted from this paper, and I can only hope that some of the features in children's rashes to which I have tried to draw attention may prove of slight assistance or interest to some one in practice.

THE late Sir Joseph Dalton Hooker, O.M., M.D., the famous botanist, left estate of the gross value of £36,861, of which £32,380 is net personalty.

THE usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on March 15th, Dr. de Havilland Hall in the chair. The amount of sickness pay disbursed in the early months of the year is always much greater than the amount required in the summer and autumn, and so far the experience of 1912 is about normal. The number of new sickness claims received has been rather large, but, being for the most part of short duration, they have not caused a more than usually heavy expenditure. The committee examined the draft of the annual report for 1911. The business of the society during last year was exceptionally good, and produced a considerable increase in its financial stability. The invested funds now exceed a quarter of a million sterling. The number of new entrants has grown with the age of the business, and the number obtained in 1911 was, with one exception, the largest secured during any previous year's working. The number of sickness members who attain the age of 65 years and, in accordance with the rules, then go out of benefit necessarily grows year by year. A substantial bonus is paid to each of them, and by a recent resolution of the committee a bonus is paid to the representatives of those sickness members who die before attaining the age. Many letters received at the office show that these bonuses are very much appreciated. Prospectuses and all further particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

A CASE OF LATE SYPHILITIC GLOSSITIS TREATED BY SALVARSAN (EHRLICH-HATA).

[With Coloured Plate.]

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In the case of severe late syphilitic glossitis reported below I was fortunate enough to obtain an excellent drawing in colour of the tongue immediately before treatment by salvarsan, as well as others depicting the condition on the ninth, nineteenth, and fortieth days after treatment. On this account, and also because the case is a striking example of rapid improvement effected by a single dose of salvarsan in a condition which had proved refractory to the regular and protracted exhibition of mercury, it appears to me to deserve publication.

The patient, a male aged 40, had a chancre on the penis, with buboes, in February, 1902, and later in 1902 there was a secondary eruption on the face. In August, 1904, an ulcer appeared on the inside of the lower lip. About a month later lesions on the tongue were noticed, the tongue beginning to swell and to become fissured. From that time until the autumn of 1911, with occasional abatements, the glossitis got gradually worse, the tongue becoming more swollen and the fissures deeper; in October, 1911, it began to split at the tip. All this time the patient had been taking small doses of hydrargyrum cum creta.

When the patient came to me, on November 1st, 1911, the tongue was eroded and painful, and its surface irregular and lobulated. It was so swollen that it could only be protruded with difficulty, and the teeth could not be seen. There were deep fissures, and at the tip it was split completely through. Ulcers were present both on the tongue and on the lower lip. The Wassermann reaction was positive. On November 18th 0.6 gram of salvarsan was injected intravenously by Dr. Henry MacCormac, the saline being made from water distilled twenty-four hours before use. There was very little general reaction on the day of the injection, but there was marked swelling of the lower lip. On the second day the patient felt very sick and uncomfortable, and his temperature was 102° F., but it fell to normal in the evening and remained so. On the tenth day after the injection the tongue was less swollen and not so painful; by the twelfth day the ulcers had disappeared. During December the fissures began to heal, those at the base in the direction of the tip, the cleft at the tip in the direction of the base. By January 15th, 1912, the fissures were entirely healed and the tongue had returned to its normal size. The erosions also healed; there is now no soreness, and the patient is able to eat with comfort. An eruption on the scrotum and perineum which had persisted for four or five years, and a slight lesion on the left hand, have entirely disappeared, and the general physical condition has greatly improved. The patient is now taking small doses of mercury by the mouth.

Remarks.

I know of no other remedy, or combination of other remedies, which is capable of producing so rapid a disappearance of severe and long-standing lesions as was brought about by salvarsan in this instance. The case appears to me to be worth consideration at a time when there are some signs of a reaction against the new specific. At first, in some quarters, its claims were admittedly put too high. In some cases marked improvement is followed by relapse; in others, though not in many, the disease shows itself obdurate to the remedy; in yet others it has evoked unfavourable symptoms. That such experiences should cause a backward swing of the pendulum was only to be expected. The phases through which tuberculin has passed furnish a warning against the folly of extremes. In that instance the disappointment of exaggerated expectations produced a reaction which led to the undeserved neglect of a valuable agent, and it is only now that tuberculin is finding its true place in the diagnosis and treatment of tuberculosis. That salvarsan is an infallible specific, or that it should be employed promiscuously in syphilis, no one will now maintain. For cases in which there are certain complications or sequelae, such as advanced pulmonary tuberculosis, severe diabetes, grave disease of the liver and kidneys and other abdominal viscera, liability to haemorrhage, pronounced cardio-vascular change, or lesions of the central nervous system, its unsuitability is admitted. In some of these conditions it is doubtless defective elimination, owing to disease of the eliminating organs, that explains the unfavourable results; and the fact that when injected intravenously salvarsan is excreted in the urine much more rapidly than when injected intramuscularly or subcutaneously, is one of the reasons why the first of these methods is preferable to the other. Further advantage of the intravenous methods is the absence, as in the present case, of severe local pain, of infiltration at the site of the injection, and of sloughing of the skin. The general reaction, too, is usually less severe, and seldom lasts longer than the twenty-four hours to which it was limited in this instance.

The case also illustrates the greater amenability to salvarsan of tertiary than of secondary syphilis. It is in the secondary rather than in the tertiary stage that the disease sometimes fails to respond to the remedy. It will be noticed that the striking results described were produced by a relatively small quantity of salvarsan. Some of those who have had most experience with salvarsan have given 1.5 or 1.8 grams, in three fractions distributed over a period of several weeks; and in treating cases in the secondary period, free from any counter-indications, a more vigorous use of the remedy than was necessary in this case would no doubt be desirable. But in respect of dosage, it is too early yet to lay down any rigid rule. It is still necessary to feel one's way cautiously. The reports that have recently been published of fatalities following the administration of salvarsan form, it is true, but an infinitesimal proportion of the great multitude of cases in which it has been employed with safety and with marked benefit. They do not justify the neglect of a potent remedy because it is not entirely devoid of risk, but they do suggest the necessity for caution. It is well to be reminded that heroic measures might easily end in disaster. From one danger, however, which was not unreasonably apprehended as the result of experience with atoxyl—that of damage to the optic nerve—salvarsan appears to be free. Ehrlich, in his *Experimental Chemotherapy of Spirillosis*, states that not a single case of blindness in connexion with salvarsan has been reported to him, and declares that after penetrating research he has been unable to run a single one of these rumoured cases to earth. Wechselmann, who has maintained towards salvarsan a judicial attitude which has not been observed by all who have extensively used it, has testified that in upwards of 1,200 cases in which he had used it at the time of writing, he was unable to find any trace whatever of injury to the optic nerve. In the few cases in which other syphilologists have reported optic nerve changes it is, of course, possible that the disease rather than the remedy was responsible for the mischief.

In supplementing salvarsan with mercury I am following the plan which has all along commended itself to me. Leredde argues brilliantly against the combination, although it has received the imprimatur of Ehrlich himself, and is supported by the high authority of Neisser. To Leredde's contention that, in practice, the association of the two specifics will end in the ineffective use of both, I am unable to subscribe. At present we know too little of the precise mode of operation of either mercury or salvarsan to be justified in asserting that they have no complementary action. On the other hand, it is obviously true that by combining the remedies they can both be employed well within the margin of safety. When by lapse of time it has been proved that the effects of salvarsan are permanent, we shall be justified, in suitable cases, in relying upon it alone. Until then the prudent course, in my judgement, is to follow it up with moderate doses of mercury. The further treatment, if any be required, must be determined by the course each case runs, and the result of further applications of the Wassermann test.

SIR MALCOLM MORRIS: SYPHILITIC GLOSSITIS TREATED BY SALVARSAN.

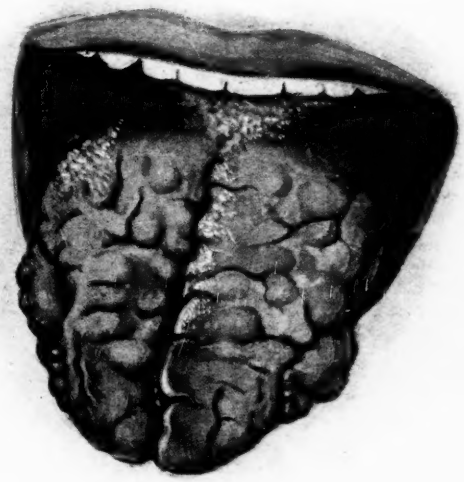

FIG. 1.—CONDITION BEFORE INJECTION.

FIG. 2.—NINTH DAY AFTER INJECTION.

FIG. 3.—NINETEENTH DAY AFTER INJECTION.

FIG. 4.—FORTIETH DAY AFTER INJECTION.

SIXTEEN MONTHS' EXPERIENCE OF SALVARSAN.

BY

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WE have been using salvarsan since October, 1910, when Professor Ehrlich kindly placed some at our disposal for experimental purposes. From the first we have been much impressed by its effect on syphilitic lesions, and we venture to present the following synopsis of our results.

We have treated altogether 92 patients, almost all of whom were private patients. Eleven of them received two injections, and one patient three injections, making a total of 105 injections in all. Seventy-four of our patients received intravenous injections, and 18 were treated intramuscularly. Of the latter, 5 received an injection of the neutral emulsion, and in 13 the salvarsan was injected rubbed up in sterile olive oil.

Of the 11 patients who had two injections, 8 had two intravenous injections, 1 had two intramuscular administrations, and 2 had an intramuscular and an intravenous injection. One of these had an intramuscular injection in neutral emulsion, followed ten months later by an intravenous dose; and the other had an intravenous injection, followed about eight weeks later by an intramuscular injection in oil.

The patient to whom we administered three injections received them all intravenously.

The Sex of the Patients and the Stage of the Disease.

Eighty-three of our patients were male and 9 female; 41 were in the primary and secondary stages, 45 were in the tertiary stage; there were 2 cases of incipient general paralysis of the insane, 2 of locomotor ataxia, 1 of sclerosis of the cord following transverse myelitis, and 1 of congenital syphilis.

Dosage.

As a rule we administered a full dose of 0.6 gram; 5 of our patients received 0.5, 4 received 0.45 gram, for the initial dose; one 0.4 gram, and 9 received an initial dose of 0.3 gram. Of those receiving two doses, 7 received 0.6 followed by 0.3, one received 0.45 followed by 0.3, three received 0.6 followed by 0.6 gram. The patient who received three injections had 0.3 gram on each occasion.

The Reaction.

Intramuscular injections in neutral emulsion are very painful, and require to be followed by the administration of morphine. Intramuscular injections in oil are not very painful at the time of administration, but in three or four days there is sometimes considerable swelling with redness and tenderness on pressure over the site of the injection.

There has been much discussion as to the reaction which follows an intravenous injection. We have fortunately never seen any of these alarming reactions of which so much has been made by some of the critics of salvarsan, and we attribute our immunity to the careful preparation of our patients, the technique of the administration, the after-treatment of the patient, and the fact that we make our solution with saline solution freshly prepared and sterilized immediately before each operation.

The evening before treatment each patient receives a purgative; in the morning breakfast is restricted to a cup of tea or cocoa and a slice of toast, and about five hours afterwards the dose is administered. After the injection the patient is returned to a warm bed and receives nothing except a sip of water for four or five hours. By following this line of treatment we have found that some of our patients have had no reaction at all more than a little sickness or a slight looseness of the bowels. We still hold that in some measure the reaction is related to the acuteness of the disease, and we should expect a patient with a florid secondary eruption to give a more severe reaction than an old tertiary case with an ulcer of the leg; but we have never seen any of these fulminating reactions with frequently repeated rigors, hyperpyrexia, and profound and alarming prostration.

Elimination of Arsenic.

After an intravenous injection arsenic is discoverable in the first urine voided. A dose of 0.3 gram administered intravenously disappears completely from the urine on an average in four to five days, while a full dose of 0.6 gram is eliminated in from seven to nine days. Some of the arsenic is undoubtedly eliminated by the gastro-intestinal mucosa, as we have discovered it in the stomach contents after vomiting.

In comparison with this rapid elimination the persistence of arsenic in the system after an intramuscular injection is very remarkable. We have found definite traces of arsenic in the urine of a patient twelve weeks after an intramuscular dose of 0.3 gram in olive oil. In this case the patient was a man of feeble physique and slow metabolism, but in all cases we have found that whereas a dose of salvarsan given intravenously is rapidly discharged from the system, the disappearance of an intramuscular dose is a matter of weeks, and may be months.

The Effect on the Lesions.

Primary Sore.—In some cases the effect on the primary sore is almost immediate, there being a definite improvement visible the day after the injection. An ulcerated chancre will cicatrize in from four to seven days, but if the chancre is a large one and the induration very considerable, ten to twelve days may be required for its healing. In some cases the induration will persist for a few weeks after an injection, though the superjacent and surrounding tissues appear normal. In all cases our experience has been that the primary sore is more rapidly influenced by salvarsan than by mercury.

Secondary Lesions.—The effect of salvarsan varies with the nature and type of the secondary lesion. The roseolar eruption will disappear within a week after an intravenous dose, and we have seen an almost equally rapid result follow an intramuscular dose. The maculo-papular eruption, however, recedes somewhat more slowly, but, as a rule, has disappeared in from ten to twenty-one days. No lesions yield more quickly than the mucous patch and the condyloma. Many mucous patches will disappear from the buccal pouches and the isthmus of the fauces in forty-eight hours, and condylomata will wither up in two to three days. The characteristic headache of the secondary stage vanishes in most cases within twenty-four hours; but in a recent case of a young lady with an extragenital chancre there was an attack of periostitis of the frontal bones three days after the injection. The generalized adenitis is the slowest of the secondary symptoms to recede; it may persist for several weeks after all other outward symptoms have disappeared.

Tertiary Stage.—In this stage salvarsan is of great value, and will cause ulcers that have resisted the action of mercury and the iodides to heal up rapidly. For this reason it has been suggested, especially by the French school, that salvarsan is a cicatrizing rather than a spirillocidal agent. But the truth probably is that it combines both properties. The difficulty of causing advanced ulcerative processes in the mouth and throat to yield to treatment is well known. Here salvarsan is of supreme value, and among the cases which we shall quote shortly we have a remarkable example of this fact. Syphilitic affections of the organs of special sense are also much benefited by salvarsan. Two of our cases had syphilitic iritis at the time of injection, and quickly got rid of it; while in one case there was an extraordinary improvement in the hearing of a patient, who, the day after the injection, was able to hear the church bells, which she had been unable to do for many months before. Unfortunately, however, this improvement was not permanent.

Parasyphilitic Disease.—Our experience has been that salvarsan can produce a marked amelioration of symptoms. In the two cases of incipient general paralysis we have treated there was for a time an improvement in the speech of the patients, but this was not maintained. One of the patients was able to return to work for several weeks after receiving an intravenous injection, but he subsequently relapsed. In tabes, salvarsan has in our experience of two cases been more effective, and has caused the disappearance

of lancinating pains, gastric crises, and at the same time improved the patient's power of balancing himself.

We are not sanguine enough to persuade ourselves that salvarsan can restore to its original condition a degenerated neuron; but there is no remedy known to us which has that beneficent property, and the impotence of salvarsan in this direction is not peculiar. But we are convinced that if every case of syphilis in its early stages were treated vigorously with salvarsan there would be fewer patients who would drift into the living death of general paralysis or the crippling ataxia of tabes.

The Effect of Salvarsan on the Wassermann Reaction.

In the Wassermann reaction we have a guide of considerable value as to the adequacy of antisyphilitic treatment. In some cases a single full dose will convert a positive into a negative reaction in three weeks to a month from the time of its administration.

In one of our earliest cases, where the patient received 0.45 of a gram intramuscularly, the Wassermann reaction became negative and remained so for nearly nine months. During these months the patient had no other treatment but was kept under regular observation. A clinical relapse, evidenced by some periostitis, coincided with a return of the reaction to positive. He then received an intravenous injection of 0.6 gram followed by a series of intramuscular injections of grey oil, and the Wassermann reaction became negative again.

In some cases a single injection of salvarsan will not convert a positive into a negative reaction, but a second injection will bring about this change. In our experience a rapid change from the positive to the negative is more likely to occur if the patient, in addition to salvarsan, has had either a preliminary or a subsequent course of vigorous treatment with mercurial inunction or injections. This fact supports the practice which we invariably follow now—namely, a combined treatment with salvarsan and mercury.

The General Effects of Salvarsan.

As salvarsan is an arsenical compound we would expect to find its administration followed by some of the tonic effects of that drug, and our experience has been that there has always ensued a considerable improvement in the patient's general health. The skin becomes clearer, the lips and conjunctivae become more red, and there is almost always an increase in the patient's weight and a remarkable sense of well-being.

Contraindications.

We have denied salvarsan treatment to only two patients who were referred to us for treatment. One was a case in which severe glycosuria complicated the syphilitic condition, and the other was a patient with an extensive weeping eczema.

We have administered it, of course with all due precautions, to two patients with well-compensated mitral incompetence, to two pregnant women, and to a patient passing 5 grains of sugar in the ounce of urine. These patients did not cause us an extra amount of anxiety, and were all greatly benefited by the treatment.

Dangers.

There is an unfortunate idea about, even in professional circles, that salvarsan is a very dangerous remedy, whose use may lead to fatal results and serious disaster to the optic nerve. Like all potent remedies, salvarsan, if improperly administered, may bring about death; but we are firmly convinced that the dangers of its use have been grossly exaggerated. It is a hard thing to suggest that international politics can produce prejudice against a scientific discovery, but we cannot forget that reports of disaster from the use of salvarsan emanated from France before a single dose of salvarsan had been administered in that country. And, further, more fatal accidents would seem to have followed its use in France than anywhere else.

The fatal accidents have been due either to large overdoses, the choice of unsuitable cases, or errors in technique.

In the first 40,000 injections there were 23 deaths, or 0.05 per cent. It has been estimated by Browning and Mackenzie that over one million doses have now been administered, and the mortality per cent. is infinitesimal. As with the administration of anaesthetics, so with salvarsan: careful administration reduces the danger to a minimum; careless or haphazard administration means disaster. The consensus of the best recent opinion is that salvarsan has not the slightest deleterious effect upon the optic nerve.

The Question of Relapses.

Syphilis is a disease which, under any form of treatment, is characterized by long periods of quiescence and unexpected relapses. Of the cases we have treated, excluding those in which the nervous system was affected, three only have shown any further symptoms after the injection of salvarsan. These facts alone we regard as a proof of the supreme value of the remedy as an antisyphilitic.

Since June of last year we have followed the routine practice of reinforcing the action of salvarsan by following it with a course of inunction with mercury or the intramuscular injection of grey oil. Our reason for this was not any distrust of the remedy, but a recognition of the principle that in dealing with a serious malady, such as syphilis, it is best to make assurance doubly sure. It must not be forgotten that a spirochaete may be lodged in a thrombosed blood vessel or surrounded by fibrous tissue in such a way that an intravenous dose of salvarsan cannot reach it. This spirochaete may lie dormant for a long time before resuming activity, but if the salvarsan injection is followed by mercurial treatment the mercury may ferret out the concealed micro-organism and destroy it. We regard the combined treatment as the best.

General.

Every case treated has responded to salvarsan. In only one—a case of ulceration affecting the cartilage of the nose—was this response delayed. In this case we had given an intramuscular injection in oil, and absorption was very slow; but on administering potassium iodide, which had been previously given without result, there was a rapid improvement, and a second intramuscular injection completed the healing process.

In two cases there was a very slight herpetic outbreak after the injection. One was after an intramuscular injection in neutral solution, and was characterized by the appearance about three weeks later of a few abortive herpetic vesicles in the temporal region. The other occurred about a week after an intravenous injection and affected the chin. It also was very slight.

The following cases will suffice to indicate the remarkable properties of salvarsan:

CASE I.

A ship's captain, aged 51, sent by Dr. Popert, of Southport. Primary infection twenty-seven years ago. When seen by us he had been suffering from extensive ulceration of palate and throat for nearly a year. He had had much treatment with mercury and potassium iodide, and in January, 1911, had received in London an intramuscular injection of salvarsan.

On examination he presented the appearance of a man in the last stages of malignant disease. He was much emaciated, his complexion was a dirty sallow colour, his lips were pale, and he was extremely feeble. The fetor of his breath was intense, and pervaded the whole room. There was extensive ulceration of the palate and posterior pharyngeal wall. Swallowing was extremely painful.

On September 11th, 1911, he received an intravenous injection of 0.6 gram of salvarsan. The following day he expectorated a piece of necrosed bone measuring about 1 in. by $\frac{3}{4}$ in. On September 13th the ulceration of the palate had assumed a healthier appearance, he could swallow with more ease, and felt better. On this day we excised the encapsulated remainder of the intramuscular injection which had been administered in London eight months before. This consisted of a mass of necrosed tissue situated between the inner border of the left scapula and the vertebral column. It measured about 3 in. by 2 in., and the walls of the capsule, which consisted of necrotic muscle fibres, were about $\frac{3}{4}$ in. thick. The contents of the cavity were 1 to 1½ drachms of emulsion of salvarsan. This case illustrates one of the disadvantages of the intramuscular method of injecting salvarsan, and the fact that the salvarsan emulsion was lying encysted there explains why he had derived little, if any, benefit from that injection. The following day he passed out of our care into that of Dr. Popert, who kindly reported on November 23rd that the patient had made an uninterrupted recovery, the ulceration of the palate and pharyngeal wall had healed, the only defect being a tiny hole through the soft palate.

This was a case in which both mercury and potassium iodide had failed, and where salvarsan, too, had been administered without benefit through encapsulation of the

injection. We believe that in this case the intravenous injection of salvarsan saved the patient's life.

CASE II.

A doctor, aged 34, sent to us by Mr. Craig Dun. The primary infection was in January, 1908, and, in spite of treatment carefully carried out from the beginning, there was early ulceration and repeated relapses. He had been treated with hydrarg. cum creta by the mouth and intramuscular injections of grey oil in the most thorough fashion, but, in spite of this, his history was one of constant relapses, and from the time of infection he was rarely free from some manifestation of the disease. He was referred to us in March, 1911. His chief symptom then was nocturnal headache, sufficiently severe to prevent him from sleeping, with boring pains in the bones of the face, also worse at night. He gave a well-marked positive Wassermann reaction.

On March 27th, 1911, at 12.30 p.m., we administered an intravenous injection of salvarsan. He kindly made notes for us of his subsequent progress, from which a quotation may be of interest:

"At 6 p.m. and 9 p.m. the bowels were moved. The usual headache, which started between 8 p.m. and 10 p.m., never arrived, and I fell asleep waiting for it. March 28th. Woke this morning with sense of relief; ate breakfast, and swallowed with no discomfort whatever."

It seems almost like a fairy tale, but from that day till December, 1911, when we last saw the patient, he had no further headache nor any other symptoms of syphilis. In May he gave a negative Wassermann reaction, but it had changed to a slight positive in December, 1911, and on that account we gave him another full injection of 0.6 gram.

He promised to let us know at once should there be any further symptoms, and, as we have not heard from him, we take it no symptom has appeared.

CASE III.

A ship's captain, aged 43. Primary twelve years ago, and had had no objective symptoms for eleven years. About fifteen months before he was seen by us he had a temporary paresis of the right arm and of his speech centre. When seen by us in October, 1911, the knee-jerks were absent; he had lancinating pains in the legs, the Argyll Robertson pupil, and the other cardinal symptoms of locomotor ataxia. Wassermann reaction positive. On October 21st he received an intravenous injection of 0.6 gram.

On October 25th he volunteered the statement that he felt much better, and was more certain of his legs. He had had no lancinating pains since the day after the injection. He had to return to sea, and was instructed to carry out mercurial inunction. On December 27th he returned, and reported that he felt very much better. He had lost all pains in the legs, though there had been a slight return after he had been exposed for forty-eight hours on the bridge in a storm. His speech had improved, his gait was better, he had more control over his limbs, and said "he could dance the Highland fling." Wassermann reaction being, however, still positive, we gave him on January 2nd, 1912, another injection of 0.6 gram.

CONCLUSIONS.

1. In salvarsan we have a unique and potent remedy for the lesions of syphilis.
2. It is a remedy that is efficacious at every stage of the disease.
3. It can bring about healing in lesions that have resisted mercury and the iodides.
4. The ideal treatment is a combination of salvarsan and mercurial treatment, beginning with an intravenous injection of salvarsan, and following it with vigorous mercurial treatment, and, if necessary, repeating the salvarsan injection. Treatment should be controlled throughout by the Wassermann reaction.
5. If properly administered to suitable patients there is no more danger attendant upon the administration of salvarsan than on the use of any other powerful remedy.
6. The intravenous injection is better than the intramuscular one.
7. Though Ehrlich's original idea of accomplishing the complete destruction of every spirochaete in the body by a single injection has not been fulfilled, he has given us in salvarsan the most powerful antisyphilitic remedy that has been discovered in our time.

THE Australian Institute of Tropical Medicine has been granted an increased endowment by the Commonwealth Government. A grant of £4,000 a year has been made from January 1st, 1912. This will permit the immediate erection of new laboratories and the enlargement of the staff, thus enabling the institute to widen the scope of its work.

CASES OF CHRONIC PURPURA WITH AND WITHOUT CUTANEOUS LESIONS.*

BY

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THE existence of purpura haemorrhagica as an acute transient disease is well known and recognized. Another type—a chronic form in which the lesions continue for months or relapse again and again—has attracted less attention among English writers,† and it is the object of the following paper to record three of these rarer cases.

The occurrence of such cases has been recognized, particularly by French physicians, ever since a paper on the subject by Racle in 1844.[1] Bensaude and Rivet, who had been making observations for some years, summed up their experience in a most excellent paper in 1905.[2] They recorded the histories of 14 cases personally observed, and of 20 other cases which they had collected from medical literature. The continued form is the rarer, the intermittent the more common; in the latter the attacks are sometimes preceded for months or years by frequent isolated haemorrhages. The duration of such cases may be as great as twenty years, and the intervals between the crises may vary from a few months to, in one case, seventeen years. The termination is variable; 5 of Bensaude and Rivet's own cases and 4 of those they collected ended in death.

As regards diagnosis, Bensaude and Rivet point out that whereas haemophilia is congenital and hereditary, chronic purpura haemorrhagica is neither. In haemophilia the blood shows a considerable diminution in coagulability, but the clot once formed contracts; in chronic purpura haemorrhagica coagulation takes place normally, but the clot does not contract. Further, in haemophilia there is no considerable diminution in the number of blood platelets; in purpura haemorrhagica this is a marked feature.

E. H., aged 46, was admitted as an in-patient at the Bristol Royal Infirmary on January 24th, 1902, under the care of Dr. Shingleton Smith, to whom I am indebted for permission to record the case. She was suffering from pains in the stomach and limbs and bleeding from the mouth. There was no family history of bleeding. Fourteen years previously she had had bleeding from the mouth and a purpuric rash on the skin, an attack which came to an end in about a week. Since that time she had repeatedly suffered in the same way, having had, as far as she could remember, an attack every year. The present one had begun two days previously with bleeding from the nose and mouth, and spots on the trunk and limbs. On examination, it was found that there were numerous discrete purpuric spots scattered over the whole surface of the body; they were mostly small, but on the deltoid region of the right arm many confluent spots made a discoloured area as large as a five-shilling piece. Numerous petechiae were present on the inner surface of the lips, on the fauces, and on the posterior pharyngeal wall. There was no vomiting, and no blood with the motions. The abdomen was normal and the liver and spleen were not enlarged. The urine contained a trace of albumen, but no blood. No fever was present. The patient rapidly got well, and went out in a little over a week. I have ascertained lately that the attacks recurred at intervals during the following five years and then ceased. The disease thus lasted for nineteen years.

J. B., aged 17, was admitted to the Bristol Royal Infirmary under my care on October 3rd, 1904, suffering from pneumonia of four days' duration. No previous illness of any note had occurred; and, in particular, he had never suffered from bleeding, nor was there any family history of bleeding. The lower lobe of the left lung was found to be consolidated. The temperature fell by crisis on the seventh day, and the pulmonary condition rapidly cleared up. During the fever the urine contained a trace of albumen, but no blood. On October 10th the boy vomited, had pains in the cervical region of the spine, and was found to be unable to straighten either arm—a condition caused apparently by contracture of the flexors of the elbow-joints. The biceps and triceps jerks could not be obtained, the knee-jerks and plantar reflexes were normal. The flexion of the arms lasted a week, until October 17th, and then slowly disappeared. On October 23rd an extensive purpuric eruption appeared on the legs and thighs, and the lower end of the right thigh became tender on palpation, but was not swollen. No leucocytosis was present. On October 25th there was some abdominal pain and vomiting, and the urine became smoky in colour and contained blood corpuscles. No renal casts were present. The purpuric rash slowly faded, no fresh spots appeared, and the urine contained, day by day, less blood, so

* A paper read at a meeting of the Bath and Bristol Branch on October 25th, 1911.

† For example, it is not mentioned by Mackenzie in Allbutt's *System*.

that on November 22nd—the date of his discharge—only a few red blood cells could be seen in the urine after centrifugalization.

During the year 1905 the boy remained well. He was readmitted on January 18th, 1906, with a slight bronchitis. The urine was free from blood and albumen, and no purpuric rash was present. On January 25th an eruption—partly erythematous, partly purpuric—appeared on the legs and thighs, and there was a second crop on February 3rd. He went out on February 15th quite well. He was again admitted on March 21st, 1906, passing blood in the urine. No renal casts were present. The haematuria soon cleared up, and he went out on April 7th. There has been no recurrence since that date.

The purpura in this case was intermittent, that is, it consisted of two haemorrhagic crises, separated by a year of good health.

I have not seen any record of the occurrence in cases of purpura of the peculiar contracture of the flexors of the elbows which this boy presented; it may have been due to haemorrhage into the spinal theca.

The origin of the purpura was most probably an abiding pneumococcic infection. It is well known that a purpuric eruption may complicate pneumonia, generally in the form of petechiae, and, exceptionally, pneumococci may be found in the blood in cases of purpura without pneumonia. The following is an instance:

Thomas G., aged 53, was admitted to the Bristol Royal Infirmary, under my care, on May 18th, 1911, suffering from purpura. Three weeks previously he had "caught cold," and, a week subsequently, spots came out over the body. It was found that the whole surface of the trunk and limbs were covered by purpuric spots, varying in size from a pin's head to a five-shilling piece. No bleeding was taking place from any internal surface; the eruption was confined to the skin. There were a few rhonchi to be heard at the bases of the lungs, but no physical signs of pneumonia. The temperature was 100° on the day of admission, normal subsequently. The red blood cells numbered 4,860,000 per c.mm., haemoglobin 80 per cent., white blood cells 7,812 per c.mm.; a differential count gave polymorphonuclears 75 per cent., small lymphocytes 20 per cent., large lymphocytes 4 per cent., and eosinophiles 1 per cent. A blood culture on May 19th, by Professor Walker Hall, showed the presence of pneumococci, and on May 23rd they were again found "degenerating." The purpuric rash faded, no new spots appeared, and the man went out on June 7th.

The man was again an in-patient of the Bristol Royal Infirmary, under the care of my colleague, Dr. Charles, from November 20th to December 5th, 1911, suffering from a recurrent attack of purpura. Only the legs were affected. The bacterial content of the blood was not determined. The disease has thus lasted in his case at least six and a half months.

Here, the only symptom of the pneumococci invasion was the purpuric rash, which was confined to the skin. Invasion by pneumococci may thus cause pneumonia or purpura, or both phenomena; if both, the purpura may occur at the same time as the pneumonia, or subsequently; and it may recur and so become of the chronic type, as in the case of the boy whose case is recorded above.

The haemorrhages in the cases recorded by Bensaude and Rivet were various in seat, but in no one were cutaneous lesions absent. In one case, however, spontaneous cutaneous haemorrhages were absent during more than a year, though epistaxis and haematemesis took place, and ecchymoses occurred on traumatism. In one case of Owen's,* cited by Pratt,[3] a girl aged 11 "had haemorrhages for twelve months, first from the bowels, then from the nostrils, and afterwards from the left ear. There was no history of bleeders in her family, no arthritis, and no purpura."

In a case of Osler's,[4] a patient who for six years suffered from recurring gastro-intestinal crises—colic, vomiting, and diarrhoea—with fever, delirium, and erythema multiforme, had no skin lesions for two years with the attacks.

Pratt concludes from such evidence that "there are some cases of the haemorrhagic diathesis which present the clinical picture of purpura haemorrhagica, except that cutaneous haemorrhages are absent. There is no hereditary or congenital tendency to haemorrhage, and hence they cannot be classed under haemophilia." The following is an instance of this very rare form:

Annie B., aged 18, came under my care in January, 1904, suffering from a painless profuse haematuria, which had begun suddenly without known cause a few days previously. There was no family history of bleeding, and the girl had previously enjoyed fair health. The urine, of normal amount and passed at the usual intervals, was bright red in colour owing to intimately mixed blood. No renal casts were seen on microscopical examination. The temperature was normal. On examination, a movable, slightly tender, right kidney was discovered. As the haemorrhage persisted, and as it seemed possible that the blood was coming from the right kidney, my collegue, Mr. Paul Bush, kindly saw the patient with me, and subsequently took her into his ward at the Bristol Royal Infirmary for further observation, and possibly operation. The blood in the urine was found to be inconstant in occurrence; it varied in amount, and on some days was absent. On April 29th the patient vomited, and the vomit was streaked with blood. This was the only occasion on which haematemesis occurred in 1904.

On May 4th the right kidney was explored by lumbar incision. It was absolutely normal in appearance, and neither neoplasm nor stone was there. Nephropexy was performed. The haemorrhage persisted in much the same fashion as before the operation. In June the bladder was examined with the cystoscope, with negative results. In the late summer and early autumn the haemorrhage very gradually ceased, and the patient went out in October.

In January, 1905, there was a recurrence of the haematuria, and the girl was again an in-patient for a month. During the rest of the year 1905, the year 1906, and the year 1907 (until October), she remained fairly well, though having slight haematuria from time to time—not enough to make her keep her bed.

In October, 1907, an acute haemorrhagic crisis occurred; large quantities of bright red blood came from the rectum and in the urine. The rectal blood was passed partly independently of the motions, partly covering them, it was not mixed with them. After the haemorrhage had lasted some days, turpentine in 20 minim doses was given every two hours, with the result of stopping the bleeding. The slight intermittent haematuria persisted until January, 1908, when another haemorrhagic crisis occurred; she vomited blood, passed bright red blood per rectum, and in the urine in large quantities. Turpentine again stopped the haemorrhage. The patient nearly died in each of these attacks.

A few weeks subsequently I found by Wright's tubes that the coagulability was normal. Liq. arsenicalis in 5 minim doses ter die was now given, and its administration persisted in. The haematuria gradually lessened, and ceased within a month. The drug was then given during the first week of each month for the following eighteen months. The patient found at first that if she did not take the medicine the haemorrhage recurred, though in slight amount; later on, that she could safely leave it off. There has been no recurrence since July, 1909.

On reviewing the details of this case, it is seen that three haemorrhagic crises occurred in the course of four years—in the first haematuria, in the second haematuria and rectal haemorrhage, in the third haematuria with gastric and rectal haemorrhage. These attacks were not isolated—haematuria of variable degree was almost constantly present in the intervening periods and followed the last attack. No haemorrhage took place in the skin, or from the nose or mouth or pulmonary tract, and menstruation was normal in amount. The coagulation time of the blood was normal. Turpentine controlled the violent outbursts of bleeding; and arsenic, apparently, brought about a cessation of all symptoms. These phenomena may be grouped together, with a diagnosis of chronic purpura without cutaneous haemorrhages.

I did not observe whether the blood clot did or did not contract, nor were any observations made on the number of blood platelets.

Chronic purpura of Henoch's type is not common, but cases of the purely haemorrhagic variety, such as are recorded above, are probably still rarer. Their recognition, however, is of practical importance, as it seems possible, at least in some cases, to bring about a cure of the condition.

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* The reference is not given by Pratt.

AN exhibition organized by the Coal Smoke Abatement Society was opened at the Agricultural Hall, Islington, on March 23rd. Though a considerable proportion of the exhibits are illustrative of modern methods of diminishing the emission of smoke by factories, a large number are of domestic interest. The Gas Light and Coke Company, for instance, shows various ways in which the direct use of coal for household purposes may be avoided. The defects of early appliances for this purpose have stood in the way of the use of gas for warming and cooking purposes, but more recent methods are very much superior. The exhibition includes some striking models illustrative of the amount of soot that falls annually in London, and of the detriment caused to public buildings by the acids evolved by imperfect combustion of coal.

LEISHMANIA DONOVANI AND LEISHMANIA TROPICA.*

BY R. ROW, M.D.LOND., D.SC.LOND.
(From F. D. Petit Laboratory, Byculla, Bombay.)

In 1904, a year after the discovery of the Leishman-Donovan body by Leishman[1] and Donovan,[2] Rogers[3] grew this parasite for the first time in culture, and demonstrated its various developmental forms up to its flagellate stage. The results obtained by Rogers in Calcutta were confirmed subsequently by Chatterjee,[4] Leishman and Statham,[5] Christophers,[6] and others. All these cultures were made in citrated blood with a variety of additions and modifications, but were not apparently available for successive cultures, the culture dying in the course of a week or two, although in one instance Leishman and Statham[7] have recorded a successful subculture.

To Ch. Nicolle[8] of Tunis belongs the credit of perfecting a technique by means of which it is possible to keep up indefinitely a series of successive cultures in a medium which is practically uniform in composition and available in any quantity. This medium has replaced in *Leishmania* culture work the original Novy-McNeal medium, in which Nicolle himself grew his first cultures of the *Leishmania* of infantile kala-azar of Tunis. It is not necessary to describe the details of preparing this well-known medium beyond stating that it is a simple agar without peptone or meat extract containing 25 per cent. rabbit's blood, and when prepared according to the formula[8] given by Nicolle,[9] has a fair amount of condensation fluid in which these parasites grow when planted. It is in the same medium that Nicolle cultured *Leishmania tropica* for the first time from material derived from Oriental sores in Tunis in 1908. Later, Row[10] cultivated independently the parasite of Oriental sore of Cambay (India) in dilute human blood, and described the various developmental stages of the parasite up to the fully formed herpetomonas-like flagellate. Although this medium answers well for developing the various stages of this parasite as well as that of kala-azar (India), as will be seen presently, it is found difficult, from a practical point of view, to keep a regular supply of it in a constant, fresh, and sterile condition, such as would be available for successive cultures. It is on this account, I believe, that, as I stated in my last memoir[11] on this subject, I had failed to keep up a serial culture of the parasite. However, since reading this paper before you, I have again persevered with this attempt, but for success I have had to make use of the Nicolle-Novy-McNeal medium for continuation of successive cultures. Of late years the study of *Leishmania* cultures has been so repeatedly undertaken, and by so many workers all over the world, as you will see by a reference to the *Kala-Azar Bulletin* before you, that I felt a certain amount of hesitation to come before you with the same subject again, but the following one or two considerations may justify my doing so.

In the first place the parasite of Indian kala-azar has been pretty frequently cultured in the Novy-McNeal medium, and also in Nicolle-Novy-McNeal medium, both in India and in England, but always unsuccessfully (except in the one case of Leishman and Statham above referred to), and this constant failure to culture by workers in India on the Indian kala-azar in the Novy-McNeal-Nicolle medium, and also the like failure of Nicolle in culturing the Tunisian parasite of the infantile kala-azar in the medium recommended by Rogers, as also the failure to infect animals with the *Leishmania donovani* of Indian kala-azar, had led to the suggestion that there may be, after all, two species of this kala-azar parasite—one the Indian and the other that of infantile kala-azar. In the face of this suggestion it may be of interest to note that from the material of a splenic puncture in a case of kala-azar at present in the Jamsetjee Jeejeebhoy Hospital in Bombay, I have succeeded in growing in successive culture (four generations up till now) in the Novy-McNeal-Nicolle medium in the same way as I have done with the parasite of the Oriental sore of Cambay, thanks to Nicolle's technique. Not only is it, then, possible to obtain the cultures of the Indian *Leishmania donovani* just as those obtained by Nicolle with the *Leishmania infantum*, in the Novy-McNeal-Nicolle medium, but also, contrary to Nicolle's observation, I find no difficulty in obtaining good developmental forms and flagellates in the citrated blood (2 per cent. sodium citrate in 0.8 per cent. NaCl). The result of the experimental infection in the monkey is being watched with interest, as a positive result would once for all remove one of the strong grounds for the supposition of the two parasites of kala-azar being distinct, and this result will be communicated at the first opportunity.

Further, it may be noted that these cultures, grown in identical conditions from the two different parasites, may help us to decide the identity or otherwise of our Indian parasite from those of North African and Mediterranean variety, and even to bring out further differences, if any, of the two kinds of *Leishmania* producing such two clinically different types of disease in India.

Secondly, it had been pointed out by myself[10] and other workers that one of the points of difference between the *Leishmania donovani* and *Leishmania tropica* is the temperature conditions, the former thriving best at a lower temperature than the latter. In the light of the present observations, however, I find there is no need to lower the laboratory temperature to 22° C., as recommended by Rogers for his acidified citrated blood medium, nor for the range found best by Nicolle[8] in Tunis, namely, 18° to 22° C. I find that the laboratory temperature in Bombay at all times of the year—including the hottest day of October or May, 28° to 32° C.—is quite good for *Leishmania tropica*, and that these as well as *Leishmania donovani* also do well during December and January temperatures, namely, 26° to 28° or 30° C. On the other hand, a lowered temperature, 18° to 20° C., in the ice box decidedly retarded the development of my culture of *Leishmania donovani*, so that what took place in four or five days took quite eight to ten days in the ice box at 18° to 20° C.

Thirdly, I find that my observations harmonize with those of Nicolle, inasmuch as that *Leishmania donovani* and *Leishmania tropica*, when planted in Novy-McNeal-Nicolle medium, develop practically in the same manner. I find no necessity of citrate nor of acidification[12] for my cultures, as recommended by Rogers. Acidification in a few tubes of my experiment has had a decidedly harmful effect on a vigorous growth; at any rate, it has been so with the few observations I have made on this point, and I have no intention just at present to test the utility or otherwise of the acid, as the cultures made in the plain Novy-McNeal-Nicolle medium are abundant and vigorous, as you will see from the living specimens under the microscope.

One other point of some difference, seen in the light of my present observation, to those already recorded by Nicolle and other observers, is in reference to the time limit. I find that for *Leishmania tropica* of the Cambay sore, from the fifth to the eighth day is the time when the parasites are at their best. They show decided signs of degeneration about the fifteenth day, and by the twenty-fifth day they are so far gone that I should not recommend this period for a reculture. The rosettes make their appearance soon after the flagellates are fully formed, and are fairly tired of dividing and subdividing, and I have seen them as early as the third day in subculture, but they are best seen, as stated above, between the sixth and eighth days. (Nicolle's cultures commence to grow about the seventh day, are abundant on the fifteenth, and live for six weeks.[8]) I believe the same rule applies to *Leishmania donovani*, but I am not able to give definite figures on this point, as I am engaged now with only young cultures, of which I have now reached the fourth generation, and my observations on this point are at present incomplete.

Comparison of Cultures of Leishmania Donovani (India) and Leishmania Tropica Grown in Dilute Human Blood up to Flagellation.

Leishmania donovani grown in (non-acidified) diluted human blood (four times citrated saline) shows nothing different from what has been observed previously by other workers on this subject, and if I may compare these changes with those taking place in the same medium for *Leishmania tropica* in the early stages of development I

* Read at a meeting of the Bombay Branch of the British Medical Association on January 4th, 1912.

find nothing beyond a slower growth and a growth more or less in all dimensions than in any one particular direction. Thus in a twenty-four hours' culture of *Leishmania donovani* the best attempt at elongation results in the production of an ovoid body. One other feature noticeable, even at this early period, is the presence of a large number of fine vacuoles in the body protoplasm of the parasite, while, as I pointed out elsewhere, the parasite *Leishmania tropica* becomes distinctly oval or oat-shaped, pointed at one extremity and larger, and even in twenty-four hours shows distinct signs of division; it also looks less spongy. After this stage, from the third till the fourth day or longer the preflagellates of both the parasites grow more in the longitudinal direction and at last go into flagellates; the only difference noted, even here, is the slow nature of growth of *Leishmania donovani* and the stunted appearance of the flagellates in comparison with those of *Leishmania tropica*. All these cultures were grown at the laboratory temperature, 26° to 30° C. These slight differences, as I pointed out, may be only apparent and not real, and may be attributable to the slight differences of the culture medium, and this is why it is important to study the cultures of the same age grown in the same medium—for example, the Novy-McNeal-Nicolle medium.

Growth of the Parasite in Novy-McNeal-Nicolle Medium.

Here are the specimens of the growth of the two parasites in a five days' culture at the same temperature of the laboratory, and I think it best to compare the figures of the parasites drawn with the same magnification (Zeiss $\frac{1}{12}$ apochromat and No. VI eye-piece) with the aid of camera lucida. It think this is far more instructive than any amount of description. I may, however, summarize the differences as follows:

1. Abundance of the growth of *Leishmania tropica* during the same period compared with that of *Leishmania donovani*. It is clear that the latter is more delicate and offers greater resistance in artificial cultures than the former.
2. The size of *Leishmania donovani* is distinctly smaller than that of the other of the same age.
3. The posterior extremity of *Leishmania donovani* is distinctly more pointed than that of any other.
4. The abundance of fine vacuoles in the fully formed flagellates of *Leishmania donovani* in comparison with those of *Leishmania tropica*.
5. At certain stages of development *Leishmania tropica* is characterized by the appearance of fine chromatin particles distributed in the body of the parasites, just as *Leishmania donovani* is hollowed out by the presence of fine vacuoles.

These last two, however, may be purely accidental.

Post-flagellate Stage of Leishmania tropica.

In a former communication[11] I had pointed out that I found it impossible to obtain serial culture of these parasites, and nothing definitely could be made out after the parasite had once gone into the flagellate stages. Since reading this paper, however, I have succeeded, as stated above, in obtaining successive culture of this body in Novy-McNeal-Nicolle medium, and have now reached the twenty-fifth culture. No better conditions seem to be required than this for studying the post-flagellate stages. The culture is rich in flagellates about the fourth day; and even by this day small rosettes seem to come into view. It appears that after the flagellates have divided and subdivided a time is reached when the parasites find it impossible to continue this mode of multiplication, and the first thing observed is a tendency for the flagellates to agglomerate together and form smaller or larger rosettes. These are formed by the flagellates grouping themselves round a centre, a centre of attraction, with their flagella or their anterior extremities directed towards this centre, so that a colony of these agglomerated flagellates is so aptly described as a rosette by Nicolle. It is possible to see a small rosette consisting of six to eight flagellates, but the rule is to find rosettes of enormous size—about the sixth day of culture—made up of countless numbers of flagellates radiating from the centre. Once the rosette is formed, by some subtle influence the individual flagellates begin to fatten, so that each individual appears like a still amoeboid mass, the nucleus, the micronucleus, and the vestige of the flagellum being still quite clearly made out. This may come about even as early as the fifth day, and then the parasite shows a fair number of fine chromatin particles. For further changes, however, older cultures, such as those of fifteen to twenty days, are required. In these it is not difficult to demonstrate a differentiation of the protoplasm of the amoeboid body into definite lumps of more deeply-staining material embedded in a lighter matrix, and from these seems to be derived a mass of what ultimately turn out to be the ⊙ bodies of the parasite. Thus it would appear that even in cultures the original body stage is brought about. In some specimens, however, the division of flagellates into flagellates seems to be persevered in with such a pertinacity that, even when the flagellates fail to divide to reproduce their own former selves, flagellates of a stunted nature are produced, and even these stunted progeny of the original flagellates, though not much larger in size than that of the body described above, still continue to retain the vestige of the flagellum, as seen in the figures shown. How far these last contribute to form the ⊙ bodies by dropping off the vestige of the flagellum, and to what extent the others described above contribute to the same end, is more than I can say at present.

The post-flagellate stages of *Leishmania donovani* are now being studied, but up to now my cultures have not grown strong enough to stand the test of being watched beyond ten days. The development up to ten days is shown to you both in the plates and in the specimens.

Should the post-flagellate development of the *Leishmania donovani* correspond with that of *Leishmania tropica* described above, it is needless to say that the two parasites run very close to each other in morphology and physiology outside the human body. It is remarkable that bodies so closely allied should be productive of such colossal clinical differences when they enter and get a foothold into the human system.

Before concluding I desire to express my deep sense of gratitude to Colonel C. H. L. Meyer, I.M.S., for his kindness in letting me have the material for work, and also for allowing me free access to the case of kala-azar under his care. But for this kindness this work could not have been undertaken. I also take this opportunity to thank Dr. Velankar, Dr. Date, and Dr. Soparkar for working with me at considerable self-sacrifice and personal inconvenience during the Christmas holidays, when this work had to be pushed, on account of the unique opportunity for work offered by this kala-azar case under the care of Colonel C. H. L. Meyer at the Jamsetjee Jeejeebhoy Hospital in Bombay.

Many microscopical slides and plates were shown, but owing to want of space they could not be embodied in this place.

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AT a special meeting of the West London Medico-Chirurgical Society on Friday, April 12th, at the West London Hospital, there will be demonstrations and a discussion on rheumatoid arthritis. The demonstrations will commence at 8 p.m., and will include the exhibition of cases illustrating: (1) Causation, (2) joint lesions, (3) trophic lesions, (4) skin affections, (5) eye affections; (6) diagnosis from (*a*) tuberculous joints, (*b*) neuropathic joints, (*c*) osteo-arthritic conditions, (*d*) gonococcal arthritis, (*e*) syphilitic arthritis. Skiagrams illustrating: (1) Changes in cartilage, (2) changes in bone, (3) deformity. Museum specimens, illustrating: (1) Lesions of cartilage, (2) lesions of bone, (3) lesions of soft tissue. Bacteria illustrating: (1) Oral sepsis, (2) alimentary infection, (3) genital infection. In the discussion, which will commence at 9 p.m., the following will take part: The President (Mr. Wm. McAdam Eccles), Dr. F. J. Poynton, Dr. T. J. Horder, Dr. Reginald Morton, Mr. Lloyd Williams, Mr. W. J. Midelton, Dr. Bernstein, Dr. F. S. Palmer.

EPITHELIOMA OF HAND AND GLANDS: REMOVAL OF TWO FINGERS AND THE GLANDS.

By RUSHTON PARKER, M.B., B.S., F.R.C.S.,
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It is a question how far the following case resembles those of soot, paraffin, and allied cancers. The man's occupation associates him with the distillation of coal, but the effect of the products, if any, in promoting the growth of epithelioma in his case is as mysterious and unexplained as that of soot in cases of chimney-sweep's cancer of the scrotum. Cases of this quality have often run a very mild course, and have enjoyed an immunity from return, after even repeated operations, that has rarely been equalled in epithelioma of the limbs unassociated with soot, paraffin, and coal.

A strong man, aged 54, caretaker and worker in the gas-works, Menai Bridge, North Wales, entered my ward at the Liverpool Royal Infirmary in May, 1903, for a painful ulcerated epithelioma of three years' duration on the back of his left hand, over the metacarpo-phalangeal joints of the fore and mid fingers (Fig. 1). It had started in the latter situation, had for months prevented him from working, and was found on probing to have eroded the bones and ligaments of that joint. The lymph glands at the elbow and in the axilla also were enlarged.

Fig. 1.—May, 1903.

On May 27th the disease was removed by amputating the fore and middle fingers with half of each metacarpal bone. Pain ceased after the operation. Twelve days later the enlarged glands at the elbow and axilla were removed. All the wounds healed simply, and he went home after four weeks, resuming work, which continued for eight years.

In April, 1911, he came again to hospital for a rodent ulcer of the left temple near the eye. He was taken into Mr. Bickersteth's ward, where the growth was excised by Mr. F. Jeans on April 15th. After healing, *x*-ray treatment was applied to the scar

Fig. 2.—May, 1911.

Fig. 3.—May, 1911.

and neighbourhood for a few weeks. On my return after absence from home I was informed of his presence, and went to see him on May 15th. With the permission of my colleagues photographs were taken by Miss Irven at the Royal Infirmary on May 16th, (Figs. 2 and 3), and he went home on May 20th.

He is deeply grateful for the preservation of his thumb and two fingers, with which he can perfectly do all that is required of his left hand. He has not lost a day's work in the interval of nearly eight years.

A section of the later growth has been made in the University laboratory, and reported on by Mr. Mackarell, pathological assistant. It shows in perfection a rodent structure of the variety containing small cell-nests. I much regret that no microscopical preparation or report of the disease in the hand and glands can be found.

Sequel.

Some months after this man's return home I learnt that he had not been there a week before he had to take to his bed on account of pain in the mid-dorsal spine with gradual loss of power and sensation in his lower limbs. It seems that his pain began even before he left home in April, but he never told me of it, and when he returned home again in May he expressed himself as strong and well. The paraplegia increased and became complete, though the pain lessened. In June fresh growth appeared at the seat of the rodent ulcer, and he died of exhaustion on July 11th, 1911. The diagnosis was that of "malignant deposit affecting the spinal meninges and the cord itself."

These particulars, sent to me by Dr. John Roberts of Menai Bridge, were obtained from the patient's medical attendant, Dr. J. M. Thomas of the same place, to both of whom I am indebted for the information.

The eventual fatality does not detract from the success obtained with the hand and glands of the upper limb, and I regard it as a very encouraging example of conservative practice.

ON ACUTE POLIOMYELITIS (HEINE-MEDIN'S DISEASE).*

By R. MORTON HEWITT, B.A., M.D.Dubl.,
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I wish to record a couple of cases of acute poliomyelitis, or Heine-Medin's disease, which illustrate two separate forms of the disease, that is, the spinal and ataxic types. I have not had the advantage—a questionable one from the patient's point of view—of studying the morbid anatomy of this disease, but from the researches of others it appears that we must take it: (1) That the lesions should no longer be considered as limited to the anterior cornua but are diffused throughout the central nervous system; (2) that so far bacteria have not been demonstrated; (3) although the bacillus of acute poliomyelitis has not been isolated, Flexner has shown that the virus or infective agent can pass through a Berkefeld filter, and the filtrate has subsequently infected monkeys, though the incubation period of monkeys was longer with a filtered than with an unfiltered virus, varying from five to twelve days; (4) the disease has been communicated by means of an emulsion made from the spinal cord of an acute case; (5) this infective agent has been shown to retain its virulence for a long time outside the organisms of animals, to be fairly sensitive to heat (twenty minutes at 50° C. destroying the virus) and insensitive to cold (a virulent emulsion kept at freezing point for eleven days did not lose its activity to any marked extent).

Now how does the virus penetrate? Flexner and Leiner[1] point out the probability of the naso-pharynx being the point of entry. They produced paralysis in monkeys by scarifying and then rubbing the nasal mucosa with the active virus, the disease appearing in from five to eleven days; but the faculty of penetration does not appear pronounced, as Levaditi[2] was unable to infect his monkeys either by painting the naso-pharynx or by placing plugs soaked in the virus in the nasal fossae. In cases of Heine-Medin's disease the nasal mucosa has been shown to contain a virus capable of transmitting the infection to animals. The virus has not been found in the urine, faeces, kidney, or intestinal mucosa.

Although epidemics were noted in Scandinavia as far back as 1881, Medin of Stockholm was the first to give precise information on the subject. He was followed by many other observers from many lands. The analysis of these epidemics shows: (1) They occur at the end of the summer and in the autumn. (2) Neither defective hygienic conditions, poverty, nor overcrowding favour the extension of the disease.

*Read before the Isle of Wight Division of the British Medical Association.

Medin adopted the following classification of the disease: (1) Spinal; (2) ascending or descending paralysis (simulating Landry's paralysis); (3) bulbar; (4) cerebral; (5) ataxic; (6) polyneuritis; (7) meningeal.

My experience is limited to the spinal and ataxic forms—three cases of the former and one of the latter. Of the former, two followed the classical description of infantile paralysis in the early Nineties. The paralyses were limited to groups of muscles—in one case of both legs and in the other of arm and leg on the same side, but in neither case was there complete paralysis of arm or leg. One case has completely recovered (after four months); the other has still considerable loss of power in the arm. The third case presented some unusual features.

The patient, a girl, aged 12, and, as in each of my four cases, with fair hair and complexion, was of active habits and of more than average intelligence. I was called to her on September 25th, and found her with temperature 102.4°, pulse 110, complaining of headache and pains in the back; in fact, presenting a picture usually seen in influenza cases. She said that on September 22nd she did not feel well and her "right arm felt limp." This passed off, but on September 24th she felt "achy all over, most in her back." There were no throat symptoms. On September 26th, temperature 102.6°, with condition unchanged. September 27th, temperature 99.8°; right arm found completely paralysed. September 28th, temperature 98.6°; left arm partially paralysed. September 29th, paralysis of left arm increased and both legs affected.

October 1st, temperature and pulse normal. Both arms completely paralysed except movement of fingers of left hand. Extensor paralysis of both legs. Knee reflexes absent. Marked ptosis of left eyelid. Constipated. No bladder symptoms. Acute paroxysms of pain occurring regularly every two hours day and night. Pain referred to first and second lumbar vertebrae. These paroxysms continued with little variation for three weeks, being, apart from paralysis, the prominent feature of the case. Drugs at first gave no relief, morphine gr. ¼ giving about a three-hour interval with sleep. I then put her on phenalgin gr. 2½ every two hours. This seemed to have immediate result; the paroxysms became less severe, with longer intervals between, being four and then six hourly. Finally, in the middle of the fourth week the pains stopped altogether. I started massage during the eighth week, and electricity the week following. The patient has made steady improvement up to date, the left side progressing more favourably than the right. She has good use of the left arm and hand, and can walk a considerable distance, though slowly. Knee reflexes still absent.

Since writing these notes on January 20th the case progressed favourably with massage daily and electricity twice a week, generally in form of Schnee baths with a current up to 45 milliampères for twenty minutes. On February 12th, while having one of these baths, the current being 17 milliampères and duration three minutes, the patient gave a scream and had a typical epileptic fit lasting about four to five minutes, recovering in the usual manner. She was in her usual state that afternoon and there has been no recurrence (February 24th). The improvement in the paralysed muscles has continued and the patient is in good health. There was no history of epilepsy in the family. While attending to the fit the electric current was not shut off, so I tested it myself and found nothing wrong; the makers also tested the instrument (a Davon table) with the same result. I can find no record of epilepsy associated with Heine-Medin's disease, and so consider this case worth noting.

The fourth case was of the ataxic type, the prominent feature being very irregular high temperature.

I was called to the patient, a bright girl 8 years of age, on November 20th, and found her presenting the same condition as I described in Case III, temperature being 102.4°, pulse 120. Her throat was red and inflamed. I was informed that for the previous fortnight she had looked "peaky and liverish," and during the last week seemed disinclined to run or play and complained that her dancing lesson made her feel sick and giddy. On the 16th she went out to tea, but drove home feeling sick and giddy. On the 20th she complained that she could not get warm, and after tea burst out crying and was carried to bed as she could not walk. She cried when lifted or turned in bed. Her condition remained about the same for the next four or five days, when I observed on getting her out of bed a distinct ataxic gait especially noticeable in the left leg. Knee-jerks rather active. No nystagmus, paralysis, loss of sensation, or inco-ordination in arms or hands. Throughout the illness constipation was a particularly troublesome feature. This ataxia increased until the patient became too weak to test her, and the temperature took on a higher range, varying from 99° to 104°, often in less than two hours. Antipyretic drugs and sponging had a very temporary effect. On November 29th a punctate erythematous eruption appeared, fairly general in distribution but most marked over pressure points. This rash I took to be merely another expression of general toxaemia rather than specifically associated with the disease, and it is noteworthy that I have thus far met with no case of herpes, but at Penryn in Cornwall Dr. Hopper observed 16 cases of herpes zoster during the epidemic of poliomyelitis, and points out that in no other space of time have so many cases occurred together in the district, and queries the relationship between the two diseases. The heart began to fail about this date, with symptoms of dilatation, intermitting at times as often as 1 in 4. The tongue remained wonderfully clean, but the breath was most offensive. With the exception of a trial of urotropin, the treatment was purely symptomatic. The urotropin, two doses of 10 grains with eight hours between, was followed by delirium and motor restlessness. This yielded immediately to a 5 minim dose of liq. morphinae and a withdrawal of the drug. The following day I again gave two doses of urotropin with a similar result, after which I discontinued its use. During the latter stages the heart gave me most trouble, but a Nativelle's digitoxin pilule, $\frac{1}{240}$ grain once a day, aided by a good deal of stimulant, tided the case over. She had an uninterrupted convalescence, but at present (January 20th) the ataxia is still marked, and there is some loss of power in the muscles of the leg. She has been massaged for the past three weeks.

The Source of Infection.

I went carefully into the possibilities in each case, and there appeared to be no evidence of contact, direct or indirect, between these four cases, and I came to the conclusion that the disease arose from a common origin. Whether this was (1) a dust infection or (2) fly-borne it is difficult to say. All the cases occurred in families living amongst good surroundings and in every possible comfort—no overcrowding, faulty sanitation, hermetically-sealed windows, or other aids to disease could be noted. Personally I am inclined to consider the dust infection theory the more probable. The year 1911 was exceptionally dry and hot, and possibly the increased throat infections which some of us have noted may be due to the increased dissemination of dust infections by the ubiquitous motor car. In each of my cases brothers or sisters, or both, were in direct contact with the patient up to the diagnosis of the disease without contracting the same, but I notice that in the epidemic at Stowmarket[3] there were three cases in one house, and in two other houses two cases. Three of my cases began during the hot dry weather, the other immediately after a heavy rainfall, followed by a drying wind. In no case was any increase of the house-fly pest observed.

Does the disease come from a common cause, or is it directly communicated from an antecedent case? Is it carried by a third person or by infected objects as in scarlet fever? I submit that the evidence in favour of contact transmission is slight. It is not common to find more than one case in a family. It has not been found to spread in hospitals, although isolation precautions were not taken. On the other hand, Levaditi[4] records a case of a lady taking some drawings of a convalescent patient and herself being attacked shortly afterwards with similar symptoms. Wickman[5] records cases where the disease has been for two or three years in succession in the same house; Krause,[6] cases of people coming to live in a contaminated house and contracting the disease themselves.

Prognosis.

(*a*) Mortality is variously estimated from 12 to 20 per cent., and has a direct ratio to the age of the patient, the older the more fatal. Most deaths occur during the first week, mostly about the fourth or fifth day, the bulbar and Landry types being the most fatal.

(*b*) It is certainly a fact that if a muscle reacts to faradism it will recover, but the contrary is by no means certain. If the motor cells in the anterior cornua are destroyed, then—apart from nerve transplantation which may benefit—the muscles must become useless. But as long as the cells are not actually destroyed, although the muscles may not react to faradic or galvanic currents, the prognosis is more hopeful. In the spinal case cited above I got no reaction in the muscles of the right index finger and thumb after a lapse of over thirteen weeks. There is still no reaction in the extensors of the wrist, and this after two months' massage and electricity, the latter in varying forms, faradism, combined current, and Schnee baths, but there has been steady progress and so far no period at which the patient was at a standstill. A point of treatment in this respect is the necessity of avoiding overstretching of paralysed muscles. In this case I have applied a curved splint to over-extend the wrist and so avoid stretching of the extensors and shortening of the flexors, the splint being frequently removed for massage and adjustment, and the wrist supported when the splint is taken off and not allowed to drop, for any stretching of

these paralysed muscles which are tending to recover disables them again. An excellent article by Dr. Wittek (Graz) deals with this matter in detail.

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ACUTE ANTERIOR POLIOMYELITIS IN SOUTH-WEST NORFOLK.

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As several outbreaks of acute anterior poliomyelitis have occurred during the past year in various parts of the country, a short account of ten cases that occurred in this district may possibly be of some interest.

Locality of Outbreak.

The outbreak occurred at the end of September in the Downham Rural District, which is situated in South-West Norfolk, and embraces both upland and cultivated fen land, and the part of the district affected borders on the county of Cambridge. All the cases occurred within a radius of six miles of Downham Market.

During the months of July and August several cases of this disease were noted in the adjacent parish of Littleport, in the Rural District of Ely.

Age Incidence.

The ages of those attacked, and the districts in which the cases occurred were as follows:

Group I (Southery)—	
Case I	6 years
Case II	11 months
Case III	1 year
Case IV	8 years
Group II (Barroway Drove)—	
Case V	2½ years
Case VI	3 years
Case VII	1½ years
Case VIII...	1⅔ years
Group III (Crimplesham)—	
Case IX	2½ years
Case X	1¼ years

Mortality.

Of the above 10 cases 2 died, the second child dying some two months after the acute stage of broncho-pneumonia.

Previous to this outbreak another child had died of pneumonia, in the neighbourhood of Southery, with suspicious symptoms of acute anterior poliomyelitis, but which I was unable to verify.

Transmission of the Disease.

I think the following facts will aid in showing the infectivity of the disease. Although there seems to have been no connexion between the three groups, there is distinct evidence of contact in several of the cases.

GROUP I.—All the cases lived in that part of the district which is in close proximity to a part of Littleport parish where there had been cases of a similar nature. In Case I the father had attended Littleport market. The mother of Case II had been helping to nurse Case III for ten days before her own child was taken ill. Case IV attended the school in Littleport parish, and had visited on more than one occasion a house in this parish where there had been 3 cases with 1 death.

GROUP II.—These cases lived in Barroway Drove, which is some eight or nine miles from Southery. There is little or no intercommunication between the parishes. All the cases attended the same school. Cases VI and VII were in the same house, and Case VII was taken ill a week after Case VI.

GROUP III.—These cases lived at Crimplesham. This village is in a different direction about nine miles from Southery and five from Barroway Drove. Case IX lived next door to Case X. The parents were relatives and were constantly in each other's houses.

Cerebro-spinal Fluid.

From Case V I took some cerebro-spinal fluid, and the result of the bacteriological examination was as follows:

The fluid is fairly alkaline and fairly albuminous; it gives a normal reduction with Fehling's solution. The centrifugalized deposit is small in amount and contains a few blood discs and leucocytes, the latter practically all of the lymphocyte type, and but little in excess of the normal. Neither tubercle bacilli nor pyogenic micrococci are detected in the centrifugalized deposit. The media inoculated with this specimen only show a few bacillary organisms which do not conform to any of the known pathogenic types, and are most probably of extraneous origin.

The following are the notes of the cases, kindly supplied me by the doctor in attendance:

GROUP I.

CASE I (Dr. E. G. Wales).

J. J., aged 6, Hilgay Fen. Had been ailing three days with a "cold." On October 7th was noticed to be helpless in arms and legs. This was complete on October 8th. When I saw him the child was lying on his back in bed quite helpless, colour natural, breathing natural, no pain, no vomiting, no retraction of head. He could not raise his head from the pillow or move a limb. Knee-jerks abolished, pupils contract moderately, no movement on tickling soles of feet, no anaesthesia, no *tache cérébrale* or Kernig's sign, no rash. He could swallow liquids. Temperature 100°, pulse 86, regular. Back tender all along spine. On October 9th he began to breathe with difficulty, turned cyanosed and died at 10 a.m.

There were several other children in the house, but none were affected. No connexion with Littleport except that the father had been going to Littleport Town at intervals. A week previous a child on Ten Mile Bank died from acute pneumonia which might have been secondary to acute poliomyelitis. He was helpless and moribund when seen, with both lungs intensely congested. Father a travelling baker who visits all the houses in the neighbourhood.

CASE II (Dr. Glenfield Martin).

V. L., aged 11 months, Southery Ferry. For a fortnight previous the mother had frequently visited the house of Case III and had nursed the child. Taken ill on September 18th with fever and bronchitis. The mother noticed some paralysis and that the stools were very offensive. Seen by Dr. Martin on October 2nd. Signs typical of acute anterior poliomyelitis. Paralysis of left leg. The offensive stools could not be affected by medicine.

Later in December he reports: "Tibial muscles of left ankle are paralysed and wasted. If foot were not kept in a splint it would become deformed (nature of valgus). Three other children in house all well. Prognosis is fair but hardly as good as two months ago."

CASE III (Dr. Hutt).

A. L., aged 12 months, Southery Ferry. I first attended the child on September 12th. The mother thought the right shoulder had been damaged by undressing the child. Temperature 102°, neck somewhat swollen, and did not seem to be able to keep the head in any position long. Deltoid (right) paralysed and perhaps other muscles. September 14th, temperature normal, paralysis right upper arm and both legs, adductors most marked. Present condition, January, 1912: Right leg much improved and arm very fair movement, left leg some slight shortening and foot in marked talipes and equinus position. Adductors (thigh) and peronei still useless.

CASE IV (Dr. Martin).

B. J., aged 8 years, near Southery Ferry. Previous to being taken ill had visited a house in Black Horse Drove, where there had been three cases of illness (one fatal). Was first taken ill on October 5th, with fever and bronchitis. On October 11th, when first seen, had pyrexia and headache. On October 15th slight paralysis, well marked the following day. Tenderness of affected limbs (both legs), muscles of trunk also affected, tenderness and pain at back of neck. Stools highly offensive. At first apparently no progress, but lately the progress has been good. Weakness of the flexor muscles of both thighs, no deformity although some rigidity. This case was subsequently notified for tuberculosis.

GROUP II.

CASE V (Dr. Wales).

F. B., aged 2½ years, Barroway Drove. Brought to surgery with symptoms of meningitis on October 22nd. Had a convulsion on night of 20th. No vomiting, fretful, sleepless. Temperature 104°, pulse 130, regular. Pupils equal and react. No paralysis of limbs. Slight retraction of head, cannot sit up cries when touched. Rapid improvement under treatment. Temperature normal on 24th, when slight internal strabismus of left eye was noticed. By 30th was much better, taking good food, sleeping well. Internal strabismus (paralysis left external rectus—third cranial nerve) more marked. Several other children in house all well.

CASES VI AND VII (Dr. Wales).

A. W., aged 3 years, Hooten's Row, Barroway Drove. Seen on October 24th. Had been ailing two or three days, became paralysed in all limbs and back. Temperature normal, pulse 120, breathing normal, no pain, can move feet if soles are tickled, but not legs. November 1st, Dr. Cross visited with me

and made a lumbar puncture. In January this child much improved, but cannot use right leg.

A. B., aged 1½ years, occupying the same room, became ill with loss of power in back, cannot sit up and cries if "bent." Temperature normal, limbs unaffected.

Case VI died in January from bronchopneumonia.

CASE VIII (Dr. Cross).

A. J. S., aged 1 year 8 months, Barroway Drove, near Case V. Mother noticed for a week previous that he fell about, and attributed this to some new boots.

On October 31st he fell down and could not get up again. On November 1st visited and found child lying on sofa. Temperature 101.4°, restless and fretful, breathing natural. Any attempt to straighten limbs caused child to cry out. Rigidity of muscles of neck, and spine slightly arched. Bowels constipated. Two days afterwards temperature was normal and child appeared better. Left leg appeared useless. The child gradually got better, and after four weeks was able to sit up and crawl about.

Present condition: Can stand with assistance, but cannot control the left leg, which is slightly wasted. No shortening. Health otherwise good.

GROUP III.

CASE IX (Dr. Wales).

S. S., aged 2½ years, Crimplesham. Taken ill November 5th On 6th temperature 103°, no definite symptoms, was thought to be a stomach attack. Seen on the 8th. Temperature 101°. Crying about aching in arms, difficulty in arm movements, moved legs freely. Left arm gradually became quite paralysed and remained so. The acute illness lasted five days.

CASE X.

A. R., aged 1 year 3 months, Crimplesham (living next door to Case IX). Mrs. R. had been backwards and forwards. Became ill about November 15th. A very indefinite illness, fretful and refuses food. Declines to be "sat up," and keeps back rigid, lies on back passively and cries if moved. On November 28th all symptoms have disappeared except for weakness and rigidity in back.

REMARKS.

There had been no abnormal amount of sickness in the district, and very few cases of infantile diarrhoea.

Four of the cases lived in good farmhouses with well-to-do parents, three in good cottages, and there were only two houses in which the sanitary conditions were unsatisfactory.

Eight of the cases were in the fen, some being a good distance from the high road, and were therefore not subject to any unusual amount of dust.

There were no known cases of paralysis in animals or fowls on the various premises.

Flies and other insects were abundant, and in three of the houses there were undoubtedly a number of fleas.

With the exception of Cases III and IV there were other children in all the houses, but in only one house was there more than one case.

SERUM AND VACCINE THERAPY IN CONNEXION WITH DISEASES OF THE EYE.

THE MIDDLEMORE PRIZE ESSAY, BRITISH MEDICAL ASSOCIATION, 1911.

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(*Concluded from page 665.*)

III.

THE SERUM TREATMENT OF DISEASES OF THE EYE.

SERUMS, antitoxic and antibacterial, have been used very extensively in treating cases of eye disease, and may be divided into two classes—those which have a specific action and those which are non-specific (the so-called "paraspecific serums").

Serum has usually been injected either into the subcutaneous tissues, the most frequently used and safest method; into muscular tissues; or into the blood stream, the method by which the most rapid effect is obtained. It has also been given by mouth and by rectum. Darier[8] concludes that serums given by mouth immunize but exert no bactericidal effect.

Specific Serums.

1. *Diphtheria Antitoxic Serum.*—As in diphtheria elsewhere, so in diphtheria of the eye extremely good results have been obtained by the use of this method of treatment. Sydney Stephenson[1] has reported cases successfully treated in this way. The dose should be 2,000 to 10,000 units, and at least two doses are usually necessary. In membranous conjunctivitis due to the Klebs-Loeffler bacillus the Roux serum is valuable; Axenfeld[2] has analysed the results obtained and reports favourably. In corneal diphtheria the serum is less effectual, and this is due to the fact that, though the serum does overcome the toxic effects of the *Bacillus diphtheriae*, the severity of the corneal complications depends on the mixed nature of the infection from the presence of the ordinary organisms of suppuration, staphylococci, streptococci, pneumococci, etc.; the serum has only a non-specific effect on these organisms. In such mixed infections Römer's antipneumococcus serum and polyvalent anti-streptococcus serum are of use. Post-diphtherial paralysis of eye muscles: Aubineau[24] reports a case of paralysis of accommodation cured by injection of anti-diphtheria serum. Three relapses subsequently occurred, each of which yielded to the treatment. Four doses (10 c.cm., 20 c.cm., 30 c.cm., 60 c.cm.) were given in this case.

2. *Tetanus Antitoxic Serum.*—This serum, of the same nature scientifically as antidiphtheria serum, is of value in treating tetanus having its primary point of infection in the eye. Such cases are rare, but Ellis has had two recoveries of three cases treated. Lewis also has reported the recovery of a case. Diphtheria and tetanus are the two diseases due to organisms possessing an extracellular toxin, and for this reason are especially suitable for the use of specific antitoxic serums. Specific serums have been prepared and used in infections by many other organisms with varying results. Possibly the benefit obtained in some cases does not depend on the specific nature of the serum as it does in diphtheria and tetanus. As I shall mention later, in infections due to the ordinary pyogenic cocci excellent results have been obtained with non-specific serums.

3. *Specific Antipneumococcus Serum.*—Many methods of preparing antipneumococcus serum have been employed. Kornel Scholtz[3] finds that the serum produced by infecting an animal with one culture of pneumococcus usually has no effect in agglutinating other cultures of that organism; these experiments demonstrate the existence of different strains of pneumococci. It is impracticable in clinical medicine to prepare a serum by immunizing animals to cultures obtained from individual patients, and therefore the employment of a polyvalent serum, prepared from many strains, becomes necessary. The best known polyvalent antipneumococcus serum was that of Römer. Römer[4] has lately modified the method of preparation of his serum, and has introduced a new serum on the lines of Bail's antiaggressin-containing serum; using this new serum, he reports success in the treatment of pneumococcal ulcers of the cornea.

4. *Antirheumatic Serum.*—Rosenthal claims good results in rheumatic iritis by the use of a specific antibacterial serum prepared by immunizing animals against the *Streptococcus rheumaticus*. The results have not been corroborated, and Darier[8] says better results are obtained in such cases by using Roux's serum.

5. *Antistreptococcus Serum.*—Polyvalent antistreptococcus serum has given occasional good results in streptococcal infections of the eye, but the results are not constant owing to the enormous number of strains of streptococcus which have been demonstrated. Recent methods of analysing the strain infecting any particular case by means of the sugar reactions may make possible the use of antistreptococcus serum prepared with a corresponding strain. Snell[5] reports a case greatly benefited by antistreptococcus serum. The patient had suffered from suppuration of the lids of the right eye for seven days, the temperature was 103°, delirium was marked, and the general condition grave. Streptococci were found in pure culture. Three injections, each of 10 c.cm. of polyvalent antistreptococcus serum, were given over a period of forty-eight hours. On the following days the temperature was subnormal, delirium abated, and eventually a cure resulted. On the other hand, Lawson[6] found antistreptococcus serum of no use in a case of acute streptococcus infection of the cornea.

Antigonococcus Serum.—An antigonococcus serum has been prepared by Rogers and Torry by injecting living gonococci into the peritoneum of sheep. Knapp[7] reports results of the use of this serum. He has found it of no

value in conjunctivitis, but in treating four cases of gonococcal iritis he has had three cures, the result in the fourth case being indefinite.

Antistaphylococcus Serum.—At various times serums obtained from animals by immunizing them against staphylococci have been employed, with no results of value. As we have seen, staphylococcal infections are most favourable for the employment of vaccine.

Eye affections due to the diplococcus of epidemic cerebro-spinal meningitis are not unknown, and in these cases Flexner's serum has been found to be of value.

The results, then, of the treatment of eye diseases by specific antitoxic and antibacterial vaccines are promising but uncertain, and a method of treatment giving more constant results has been looked for. Great attention has been given to the use of non-specific (so-called "paraspecific") serums.

Non-specific Serums.—Darier[8] carried out an extensive search through the columns of *La Clinique Ophthalmologique*, and reported his results and conclusions in a long paper; his paper largely is an exposition of the value of paraspecific as opposed to specific serum-therapy, and he shows particularly the value of the Roux serum in treating disease other than diphtheria. The following infections were inquired into: Pseudo-membranous conjunctivitis, infective corneal ulcers, parenchymatous and scrofulous keratitis, iritis and irido-cyclitis, traumatic and post-operative infections. Except in the case of diphtheria and tetanus, paraspecific serum treatment has given better results than specific serums, that is, the antistreptococcal serums, the antipneumococcal serums of Römer, and the antirheumatic serum of Rosenthal.

In the majority of ocular infections the result is the same whether one employs the serum of Roux, antitetanic serum, antirheumatic serum, or Deutschmann's yeast serum. It is found that every antitoxic serum acts in two ways: in addition to its specific action on the disease against which it has been prepared, it also possesses the property of bringing to every organism invaded by any infective agents some elements of general defence, capable of neutralizing or of attenuating to a greater or lesser degree the majority of the morbid symptoms caused by the said infection.

Roux's serum has been, perhaps, most extensively used as a paraspecific serum, and very many infections of the eye have been treated thus. Alexandroff[9] advises its use in 10 c.cm. doses, and as many as four doses may be necessary.

Conjunctivitis.

Excellent and permanent results have been obtained in infective conjunctivitis by Alexandroff,[9] and by Darier,[11] who has treated simple purulent conjunctivitis, gonococcal conjunctivitis, and pseudo-membranous conjunctivitis. Fromaget[10] reports two cases of purulent ophthalmia with false membrane due to pneumococcus cured within forty-eight hours by injections of anti-diphtherial serum.

Ulceration of the Cornea.

Here also good results have been obtained. Darier, in 1903, was the first to use Roux's serum paraspecifically in a case of staphylococcus conjunctivitis with ulceration of both corneae; the ulcers disappeared with scarcely a trace of scar. Since that date the same author has reported good results with pneumococcal[13] and other varieties of hypopyon ulcer.[11] Monbouyran[12] reports six successive cases of hypopyon ulcer cured by Roux's serum, using 10 c.cm. about every three days. Alexandroff[9] treated a case of serpent ulcer in a woman aged 42. There was no lacrymal disease. Under ordinary treatment the condition became worse, so 10 c.cm. of Roux's serum were given, and the case improved. Two further injections were followed by recovery, and two years later vision was normal.

Post-operative and Traumatic Infections.

Teulières[15] reports good results from the use of Roux's serum in infected wounds and perforations leading to irido-choroiditis and traumatic cataract. Alexandroff,[14] Darier,[11] and other authors have used it with success in post-operative infections.

Darier[11] describes a modification of the use of anti-diphtheritic serum. He follows its use by that of collargol injections in gonococcal cyclitis, septic corneal ulcers, panophthalmitis and septic wounds, and claims that the results are better than those obtained by the use of Roux's serum alone. He believes the effect obtained resembles that of a specific serum, but I think we ought rather to consider it as a treatment by autoinoculation, the collargol by its toxicity producing reaction which causes autoinoculation, by which means the patient may produce in his serum a great variety of protective substances.

Exophthalmic Goitre.

Mention must be made of Burkard's[16] experiments. Using antidiphtheritic serum in four cases of exophthalmic goitre, he reports three cases relieved. The results resemble those obtained by many methods of treatment, where rest of the patient commences only at the same time as the special method of treatment, and it is rather to the rest that the relief of symptoms is due.

Deutschmann's Yeast Serum.

Deutschmann[17] introduced a paraspecific serum for which excellent results have been claimed in many forms of eye disease. The serum originally was prepared by feeding rabbits on yeast in ascending doses, the serum of these rabbits being then injected into patients suffering from staphylococcus, pneumococcus, streptococcus, or other infections. Later the method of preparation underwent modification, and Deutschmann,[18] in August, 1908, described before the British Medical Association two modifications of his serum, prepared from horses, for human use:

1. Deutschmann's serum, consisting of the serum of horses fed on yeast and trikresol; this serum is obtainable in 2 c.cm. bottles.

2. Deutschmann's Serum E, which is the active serum precipitated and redissolved. It is of double the concentration of (1), and possesses the merit of never producing serum sickness.

Dosage: In children 1 to 2 c.cm. is given as a dose. In adults 2, 4, 6, or 8 c.cm. should be given two or three times weekly (occasionally more often), regulating the dose by the effect on temperature (which rises after an overdose) and clinical symptoms of the local disease.

It is given as an intramuscular injection; but, if this is for any reason impracticable, has good effect when administered per rectum.

As a curative measure Deutschmann has used his serum with good results in perforating wounds, hypopyon keratitis, post-operative infections, recurrent iritis, acute purulent irido-cyclitis, gonococcal infections, and in a case of sympathetic ophthalmia, in which, in spite of the fact that the exciting eye was not removed, a cure was obtained. Deutschmann and Neunhardt report the cure of a case of severe metastatic panophthalmitis due to endocarditis probably of gonococcal origin.

Deutschmann's results have been corroborated by many workers. Caravaria of New York has had success in septic wounds, rheumatic iritis, acute purulent irido-cyclitis, ulceration of the cornea following a burn, phlyctenular pannus, and post-operative irido-cyclitis in a patient suffering from diabetes. Cases of hypopyon keratitis healed rapidly with very slight opacity remaining. Darier[8] reports favourably, as does Schwalbach[20] in recording a severe case of inflammatory exophthalmos cured rapidly by the use of Deutschmann's serum; two relapses occurred, but each disappeared after a further dose of serum.

Von Hippel[21] has treated forty cases and gives his results. He obtained success in ulcus serpens, iritis plastica, and non-tuberculous iritis serosa. On the other hand, he found it useless in severe affections of the vitreous body. In the hands of certain other workers, however, no good has resulted from the use of Deutschmann's serum. Schmidt Rempler has been able to see no curative effect in severe hypopyon keratitis, and Napp[24] of Berlin has likewise obtained no success with this treatment. W. Zimmermann[25] lays great stress on the importance of using Deutschmann's serum early, and demonstrates its use in pneumococcal ulcers, iritis, and post-operative infections. He also advocates its use as a prophylactic against infection in perforating wounds and in operations on decrepit individuals, etc.

We see, then, that for a great variety of infections the use of Deutschmann's serum is upheld by many authors, but the nature of its action is unknown. The more likely

explanation is that of Neisser and Guerrin, who consider it a leuco-stimulant.

Non-specific antitoxic serums are, then, of great value in eye infections, and their action corresponds probably with the action of normal horse serum, the use of which was advocated by Horder.

Römer's Jequiritol Serum.

Römer employs a serum to counteract the excessive reaction which follows the use of jequiritol for pannus. The serum may be given subcutaneously or locally into the conjunctiva; the former method is preferable. Also, to avoid the occurrence of dacryocystitis from jequiritol, the serum may be instilled into the lacrymal sac before using the drug.

Coley's Fluid.

Cases of sarcoma of the antrum and orbit can be benefited by Coley's fluid containing the toxins of streptococcus and *Bacillus prodigiosus*, and cases treated thus have been recorded by Jack, de Schweinitz, Brandoux, Coley, and Weeks.

Syphilis.

The relation of serum treatment to syphilis of the eye must be mentioned. No antisyphilitic serums of any clinical value have been obtained up to the present time. The Wassermann serum test and its modifications have a close relation to the general treatment of syphilis by mercury, etc., in regulating the duration of such treatment.

Sympathetic Ophthalmia.

There is some promise of success in the treatment of this condition by means of serum. Santucci[25] has reported some experiments on animals, as the result of which he believes that there is a cytotoxin for the organ of vision which by its appearance may cause the attack of sympathetic ophthalmia. Three series of experiments were carried out:

1. One eye of an animal was enucleated and an emulsion prepared from it, which was injected under the skin and conjunctiva of another animal, A.
2. The serum of the animal A was inoculated into another individual of the same species.
3. One eye of an animal was badly damaged and allowed to shrink, then enucleated, and emulsion injected under the skin and conjunctiva.

Results.—1. After three injections, keratitis, iritis, and three nodules of exudate in the anterior chamber were set up. These gradually disappeared and the eye returned to its normal condition. Another injection was made and the other eye was attacked by similar inflammation. No result followed the subconjunctival injection.

2. Experiment negative.

3. Intense iritis set in after the subconjunctival injection, pointing to the development of an autocytotoxin.

These experiments would show that there is formed in a damaged eye a toxin which is absorbed into the blood stream and gives rise to the formation of antitoxin. If the amount of toxin is small the antitoxin formed can deal with it, but if it is large and the amount of antitoxin formed small an attack of inflammation in the uninjured eye may be caused. If, therefore, an animal be immunized by injecting into it eye emulsion the serum of this animal may be used as a curative agent in cases of sympathetic ophthalmia.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CULTIVATION OF TRYPANOSOMA RHODESIENSE.

YOUR readers might like to hear that *Trypanosoma rhodesiense* is cultivable in a modification of Nicolle's medium. The proliferation is very abundant at 25° to 27° C., and posterior nuclear forms are fairly numerous. I cannot entirely exclude the possibility of contamination with *T. lewisi*, derived from the rats from which the cultures have been made; but *Herpetomonas* forms have not been seen and the characteristic type of *T. lewisi* is not present.

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CASE OF MORPHINE POISONING.

ON February 3rd Dr. Macdonald, of Leven, reported the accidental administration of ¼ gr. morphine suppository for a glycerine one to an infant 4 months old, and mentioned the irrigation of the bowel with Condy's fluid as part of the treatment adopted. On February 17th Dr. J. Barker Smith commented on this, and urged the value of potassium permanganate in "breaking up morphine, quinine, cinchona salts, and uric acid."

My own experience was as follows: I was called on February 28th last at 7 p.m. to see a male infant of 7 months which could not be roused, and "made a strange noise" in breathing. I found the child comatose, with pinpoint pupils, and shallow, strident respiration.

The mother told me she inserted a glycerine suppository at 2 p.m., and sent the child out in its perambulator. It was sound asleep on its return, and later in the evening she became anxious about its breathing, and was not able to rouse it. I found the suppositories were morphine, 1 gr. in each, put up in a small tin box by a well-known firm, and identical in general appearance with the glycerine.

I had about 4 gr. of potassium permanganate with me, and I injected half of this with some 6 oz. of water into the rectum, which I found empty, and the remainder I dissolved in 4 oz. of water and siphoned into the stomach. I also gave a subcutaneous strychnine injection, and followed up these measures with oxygen, brief immersions in a warm bath every hour, and continued artificial respiration.

At midnight the infant had two attacks of thoracic rigidity and quickly increasing cyanosis, like the initial period in the epileptic fit. By 2 a.m. the general condition had distinctly improved, and the stridor was gone; there were signs of recovering reflexes; a little fluid was expelled from the rectum; it moved its arms about and attempted to cry. Thereafter its recovery was so rapid that by 11 a.m. it appeared quite well, with a normal temperature, and looking bright and alert as usual. Urine had been passed freely, the pupils were normal, and the tongue moist.

Throughout the pulse ran about 90 to 100, and was of good force and volume. It was really weaker twenty-four hours later, and the extremities were inclined to be cold. I noticed frequent oscillatory movements of the lower jaw during the narcotism. The muscular action was never totally relaxed, for the prehensile grasp of the hands was always evident. The reflex sucking effort was among the earliest signs of improvement. The baby, which is breast-fed and just commencing dentition, is very strong and well developed.

Nearly six hours passed between the introduction of the suppository and the beginning of the treatment, and Dr. Macdonald conveys in his note a question as to the relative toxicity of the drug when given per rectum, and, *a fortiori*, my own case suggests the very same question, apart altogether from the value of antidotal measures.

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Hungerford, Berks.

ANAESTHESIA FOR SUBMUCOUS RESECTION OF THE SEPTUM.

THE method that I have found most useful, after trying packing, injecting, and Freer's methods, only to discard them as unsatisfactory or dangerous, is to paint the septum

every two minutes for twenty minutes with a mixture of equal parts of adrenalin (or epinine) and a 10 per cent. solution of cocaine. This gives an excellent anaesthesia, or if, as I more usually prefer, the patient is then given a general anaesthetic in the sitting up position, ensures a practically bloodless operation.

London, W. MACLEOD YEARSLEY, F.R.C.S.

LARGE VESICAL CALCULUS.

ON March 16th, 1911, a phosphatic vesical calculus, weighing 9½ oz., was removed from the bladder of an adult male of 40 years of age. He presented himself at the Victoria Hospital, Bangalore, with a number of sinuses between the umbilicus and symphysis pubis, through one of which the stone in the bladder was felt by a probe. The bladder was opened above the symphysis pubis and the stone extracted. The patient, who was in a very delicate state of health, made an uneventful recovery, and left the hospital on June 8th, 1911. This is the largest vesical calculus removed in this hospital.

Bangalore. T. V. ARUMUGUM, M.B., C.M., Medical Officer.

OESOPHAGEAL STRICTURE OBSTRUCTED BY A FOREIGN BODY.

THE following case appears worthy of record:

J. C., aged 30, in October, 1908, swallowed by misadventure a solution of caustic soda. This resulted in a fibrous stricture of the oesophagus at the diaphragmatic end. Since then he has suffered from several attacks of complete obstruction, which have been relieved by the passage of bougies. In August, 1911, I passed several bougies, the largest of which was 8 mm. in diameter.

On November 19th, 1911, the man came to me again, complaining of regurgitation of all food and liquids. On this occasion I passed the 8 mm. bougie as before, but on the following day he stated he was no better. On now passing the instrument and withdrawing it I found the foreign body transfixed by and attached to the bougie. It proved to be the heart of a chicken, which, measured from its upper border, was lodged 17 in. from the mouth. The patient was unaware of "anything sticking in his throat," but he informed me that he had taken chicken broth on the evening of November 18th after having had too much beer. A length of the bougie, measuring 5.5 cm. from the lower border of the foreign body, had been passed through the latter into the stomach. The heart measured 3.4 cm. in length and 1.6 cm. in greatest width; 1.7 cm. of its length (the upper half) was perforated, but the lower half was not perforated by the bougie. The greatest diameter of the part not perforated was 1.5 cm.

The points of interest in the case are:

1. The absence of symptoms (apart from obstruction) from the lodgement of the foreign body, and the fact that the patient was unaware of its presence for three days.

2. The amount of dilatation possible at the seat of stricture, the lower half of the heart (apex downwards) being probably engaged in the stricture.

3. The method of removal.

Burnley. S. T. BEGGS, M.D., B.Ch.

GASTRO-INTESTINAL HAEMORRHAGE IN A NEWBORN INFANT.

AS suggested some time ago in the BRITISH MEDICAL JOURNAL, I send notes of a case of gastro-intestinal haemorrhage in a newborn infant, with recovery, and the treatment adopted.

Mrs. C. was confined at 4 p.m. on September 6th, 1911. The labour was perfectly normal. This was her fourth confinement. The child—a girl—looked strong and healthy, and weighed 8 lb. No family history bearing on the case can be obtained.

At 7 a.m. on September 7th the nurse noticed the baby making a gurgling sound, and found her bringing up clotted lumps, "like liver," and then bright red blood. The bleeding ceased in a few minutes, but returned an hour later, and I was sent for. I found the child blanched and pulseless, the extremities cold, and every symptom of approaching death. The bedclothes and bedding seemed soaked with blood, but the bleeding had ceased. I gave her at once 5 minims of Messrs. Duncan, Flockhart, and Co.'s vaso-constrictine (1 in 1,000), which she retained, and thereafter 2 minims every hour for twelve hours. She brought up a little dark-coloured blood at 12, 3, and 7 p.m. No further blood was vomited. Her general condition improved through the night. On the morning of September 8th she passed a large motion of meconium with a considerable amount of bright red blood. At 3 p.m. she passed another large motion with several small clots and still streaked with bright red blood. After this the motions were for three days tarry, with small clots, but then became quite normal in every way.

The vaso-constrictine was continued at increasing intervals and in reduced doses for twenty-four hours after the last trace of blood appeared in the motions. The diet consisted of iced wine whey till the mother's milk was available. For a week this also was iced, and given in small quantities at frequent intervals. Thereafter she was put to the breast. In two weeks she gained 2 oz. in weight, and in three weeks 6 oz. At four months she weighed 14 lb. 2 oz., and is at the present time a fine healthy child.

Clapham Park, S.W. A. DINGWALL, M.D.

ANCHORED DRESSINGS.

SOME time ago I recommended the use of the subcutaneous catgut suture for drawing together the skin in closing abdominal incisions. Continued use of this method showed that in a certain proportion of cases there was some oozing of serum from the wound. This moistened the skin along the line of the incision together with the two or three undermost layers of the gauze dressing. In a few of these moist cases a little superficial suppuration occurred and delayed the union of the skin edges for a few days. The infection doubtless came from the skin itself, and trouble of this kind does not seem to occur if the skin remains dry. To prevent the oozing of serum the following plan was adopted.

After the peritoneum has been closed with continuous catgut, three or four silkworm gut sutures are inserted, so as to include skin, fat, and fascia. They are left untied. The fascia is then united with chromic catgut or silk, and the skin edges are drawn together with subcutaneous catgut. The gauze dressing is then folded so as to form a narrow pad a little longer than the wound, about an inch and a half wide, and about three-quarters of an inch thick. This pad is laid over the incision and the silkworm-gut sutures are tied over the pad pretty firmly. Ten or twelve days later the silkworm sutures are cut and removed with the gauze pad. The skin is then seen to be healed and the subcutaneous catgut which united it has been absorbed.

Since this plan was brought into use about a year ago there has been no oozing of serum, no moist dressings, and no delayed healing of the skin. The pressure of the gauze pad tied down with the silkworm sutures keeps the wound dry. The pad also prevents the sutures from cutting into the skin, and it seems to serve this end better than the bits of rubber tubing which are threaded on to silkworm sutures by some surgeons.

Plans of the kind here described[1] are now being used and written about by general surgeons under the name "anchored dressings," and I would add my testimony, after several months' trial, as to the way in which they meet the special case of abdominal incisions. Needless to say, they have the additional advantage of preventing the dressing from shifting.

Manchester. W. E. FOTHERGILL, M.A., B.Sc., M.D.

[1] BRITISH MEDICAL JOURNAL, February 3rd, 1912

Reports of Societies.

EDINBURGH OBSTETRICAL SOCIETY.

Wednesday, March 13th, 1912.

DR. HAIG FERGUSON, President, in the Chair.

Ovarian Transplantation.

DR. H. S. DAVIDSON described three cases in which he had transplanted ovarian tissue. He chose patients in whom the ovaries had to be removed along with the tubes for double tubal disease. The ovaries were kept in normal saline at blood heat, and two slices of the less abnormal gland were placed in a bed in the rectus abdominis. In the first case the ovarian grafts were soon absorbed, and the usual menopausal symptoms supervened. In the second case menstruation returned and was present for six periods. Then it stopped and was followed by profuse leucorrhoea. The patient put on weight, and exhibited no menopausal symptoms. A hard lump was to be felt in the rectus muscle after the operation. In the third instance menstruation started again in October, 1911, and had recurred each month since that time. The general health was much improved. The method, it was suggested, gave a good chance of freeing the patient from pain, without the dread of the severe symptoms often associated with an early menopause. In all cases, unless when there was a chance of conception occurring, when intraperitoneal grafting should be adopted, the uterus should be removed along with the appendages. The transplanted ovarian tissue was never tender to pressure. Dr. BARBOUR asked if the return of haemorrhage after operation was to be looked on as menstruation. After removal of the ovaries haemorrhages might recur for a year or so. Could one expect internal secretion from a piece of ovarian tissue grafted in muscle? Was its formation not dependent on the ripening of the Graafian follicle? The removal of ovaries was not invariably followed by severe symptoms. Dr. BALLANTYNE thought the three cases added evidence that ovarian secretion was formed by grafts and could be utilized by the body. The transplantation of a large segment of ovary into the uterus so that impregnation might occur was an important problem, though hitherto the experimental results in animals had been negative. Dr. HAULTAIN said he had followed Dr. Davidson's cases, and had been much struck with the results in the last two instances. It was important to find out whether the menopausal symptoms were equally kept off if menstruation were not re established. If so, then it was better also to remove the uterus, as he had seen nine cases of malignant disease of the uterus after removal of the ovaries. The symptoms of the early menopause were much exaggerated. They were severe in less than 10 per cent. of cases. In asylums only 1 in 200 patients was without ovaries. After double oöphorectomy, there was no danger, and there might be benefits, in grafting pieces of ovary into the rectus muscle. Mr. SCOTT CARMICHAEL described his experimental results on ovarian grafting. He thought that grafts ultimately degenerated, but they minimized the acute onset of the menopausal symptoms. Ovarian transplantation would not be of great value in the human subject. Dr. CHURCH said that the removal of ovaries might lead to osteomalacia. The PRESIDENT said it was not to be assumed that menstruation invariably stopped after the ovaries were removed. The partial resection of ovaries was very unsatisfactory, as the remaining part was very liable to undergo cystic degeneration. Hence it was of great advantage if ovarian tissue could be transplanted. Though it ultimately became functionless, it afforded a method by which the patient might be let down gently. In severe menopausal symptoms the internal administration of ovary was helpful, and the transplantation method was even better.

Lateral Incision of the Perineum.

Dr. R. ROBERTSON read a communication on lateral incision of the perineum and its immediate repair after labour. If the perineum were allowed to tear, the bruised tissues might not heal well after immediate stitching, and the laceration was often mainly high up in the vagina, and often gave rise later to rectocele. His practice in primiparae was to apply forceps when the os was fully dilated, pull on the head, cut the perineum on the right side for about two inches up the passage, and then gently extract the head without pressure on the urethra. The edges of the wound were caught with artery forceps, and a wool plug, soaked in lysol, was placed in the vaginal roof. The stitching was done in layers with catgut and silkworm gut, and when it was completed the placenta was separated. The union was always complete, and no prolapse of the anterior vaginal wall occurred. He had never had to use the catheter after delivery. He advocated immediate repair of the torn cervix, which gave rise to so many of the minor gynaecological ailments. Dr. KEPPIE PATERSON said that when he had to deal with a tear of the perineum, two or three silkworm sutures had been sufficient to secure good apposition. Dr. HAULTAIN said he had tried the operation in former years, and then had given it up. A central posterior incision more closely resembled a natural tear, and did not cut the fibres of the levator ani transversely. Dr. RITCHIE said he should not change his present attitude. In his experience immediate repair of a rupture was followed by good results. Dr. FORDYCE said forceps should, whenever possible, be avoided in primiparae. The operation of lateral incision had a place; if it was done late, it might save the anus. He had seen severe haemorrhage from the lateral wound. Dr. WATSON preferred to place three silkworm gut sutures in the perineum before it tore. If no rupture occurred, they were readily withdrawn; if it occurred, they were tied. After Drs. YOUNG, NICHOLSON, and BOWIE had spoken, the PRESIDENT said that lateral incisions were better than posterior, as they were farther removed from the anus. The wound should be made with a bistoury in preference to scissors. Dr. ROBERTSON, in reply, said that the detachment of fibres of the levator ani from the symphysis was prevented by making a lateral incision, hence cystocele did not occur, and the sphincter ani was not stretched, hence haemorrhoids were not so liable to develop.

X-Ray Measurements of Pelvic Brim.

Dr. A. MCKENDRICK and Dr. J. YOUNG gave a demonstration of an *x*-ray pelvimeter and its capabilities and use, the former dealing with the *x*-ray and mathematical aspects, and the latter the anatomical. The measurements afforded of the transverse diameter were stated to be absolutely exact, while that of the conjugate was in a small percentage of cases liable to an error of not more than one-tenth of an inch.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

Wednesday, March 20th, 1912.

DR. SAMUEL WEST, Vice-President, in the Chair.

Electro-cardiograms.

PROFESSOR EINTHOVEN (Leyden) gave a demonstration based on observations of the movements of the heart by means of electro-cardiograms. This was illustrated by lantern slides of the records of actual cases. He pointed out that muscular contraction and action current are dissimilar, but related to one another. Contraction is a mechanical action, but action current an electrical phenomenon. Electro-cardiograms show that the pulse is an imperfect guide to cardiac action. Differences in magnitude of the pulse do not necessarily correspond to differences in the strength of the contractions of the heart. The ventricles might contract forcibly and yet a feeble or no pulse be produced by that contraction, because at the time the left ventricle is insufficiently full. This is the case when the ventricular contraction is not preceded by a contraction of the auricles. It could be shown that in auricular fibrillation the irregularity of the pulse is not caused by irregularity of the ventricular systoles, but by irregularity of those of the auricles. The *pulsus alternans*, in which every second beat is small and feeble, is probably explained by slight changes in the strength of the ventricular contractions. A negative auricular effect, as shown on the electro-cardiogram, is probably quite as valuable as a positive one. Tachycardia may exist and be demonstrable by the electro-cardiogram, but the pulse may not be rapid. The work of the heart cannot be judged by the pulse. By experiments on dogs, by which he had estimated the

ventricular pressure, he had shown that this was related more nearly to the electro-cardiograms obtained than to the state of the pulse. The differences in the degree of contraction of the heart may be small, while the differences in the size of the pulse may be very great. It is possible to judge the condition of the heart muscle with greater accuracy by means of the electro-cardiogram than by pressure curves obtained from the pulse.

Dr. FLORENCE BUCHANAN gave a demonstration of certain experimental observations which she had made on the heart movements of hibernating animals by means of electro-cardiograms. In eleven dormice she had found that during awakening from hibernation there was dissociation of the auricular and ventricular contractions. Apparently, when the animal was in its deepest sleep only the ventricles were beating. When the ventricular frequency increased to about 40 per minute auricular extra-systoles started, at first slowly and irregularly. These gradually increased in frequency and became more regular until the ventricular effects and the auricular extra-systoles were equally frequent. At the time during which the auricular effects were overtaking those of the ventricles some of the latter were dropped, giving records like those of complete heart-block produced by vagus stimulation in other mammals. True auricular systoles only became visible as the season advanced or as the number of times the animal was roused increased, and had never occurred while the ventricular frequency was less than 58 per minute. Experiments on bats served to show that evidence of heart-block, complete or incomplete, was likely to be forthcoming in those animals during hibernation.

Dr. JAMES MACKENZIE said that electro-cardiograms had afforded means of accurate diagnosis in cardiac disease, and had led to great advances in our knowledge of many obscure affections of the heart. Some years ago he had attempted to explain certain forms of arrhythmia by ascribing them to contractions starting in unusual positions, and it had been very gratifying to him when Dr. Lewis had demonstrated by electro-diagrams that the auricle in such cases had gone into fibrillation. The method had also explained some cases of tachycardia when the auricles were beating faster than the ventricles. It had helped with regard to the management and treatment of patients. He regarded the *pulsus alternans* as a condition which was not rare, but always of very grave significance.

Dr. THOMAS LEWIS paid a high tribute to Professor Einthoven's work. He said that the profession was indebted to Professor Einthoven for a perfected instrument and for a method of unrivalled precision. It had given almost entire corroboration to the findings by the method devised by Dr. James Mackenzie—that of analysis of venous pulse curves, which could be applied by all who practised medicine. He illustrated his contention by reference to the interpretation of such irregularities of the heart's action as were produced by premature contractions or extra-systoles and by heart-block. It was but rarely that the galvanometer failed to disclose the nature of a disordered heart action. Usually its answer was immediate and decisive. Dr. James Mackenzie had referred to auricular fibrillation. Among the first electro-cardiograms of this condition were those taken by Professor Einthoven, and it was his instrument which introduced the profession to auricular fibrillation as a clinical phenomenon. It was indebted to the galvanometer for its knowledge of origin of the site of the heart-beat. It had shown that in pathological states other centres of impulse formation were active in the muscle, and it had located these centres in a remarkable fashion. The new method had very materially advanced knowledge of paroxysmal tachycardia; it had shown that those crises arise, not as the result of simple disturbances in innervation, but as an outcome of new and rhythmic impulse formation in parts of the heart remote from the pace-maker. It had transpired that the galvanometer could detect not only functional disturbances of the main auriculo-ventricular bundle, but also similar defects in its main branches. A great deal of evidence was now forthcoming in support of Professor Einthoven's original contention, that the relative weights of the two ventricles could be estimated by this means. It would be needless for him to emphasize the importance of these observations. Electro-cardiography was a growing science. Instruments were being installed in all lands where pathology and clinical medicine were actually studied. The value of the method had received immediate and universal recognition.

Curves were shown to illustrate the various points.

SECTIONS OF OBSTETRICS AND GYNAECOLOGY.

AT a meeting on March 7th, Dr. W. E. FOTHERGILL, in a paper on the *Classification of the diseases of women*, described the disadvantages of the usual anatomical method of classification, and the necessity for some new arrangement of groups of diseases based on pathological resemblances and differences. The anatomical plan was often badly and illogically applied. Thus symptoms were often described as diseases of one organ or another, and real morbid conditions often placed under a wrong heading: "Cystocele" and "rectocele" were often called "diseases of the vagina," whilst "prolapse" and retroversion were misplaced amongst "diseases of the uterus." All four should be classed under abnormalities of the pelvic connective tissue. The writer referred to primary genital tuberculosis, and pointed out the inconvenience to the student in finding stray paragraphs on this subject scattered through his textbook. Similarly with regard to gonorrhoeal and septic infections. The important feature of a disease was not its symptoms and signs, its cause or its treatment, but its nature or kind. When a student decided that a gynaecological trouble was a disease, say, of the vagina, he was generally wrong, and if he was right he was no wiser, no nearer a complete diagnosis. When, however, he discovered that a condition was the result of infection, a result of injury, or a new growth, much valuable information about the case was gained. The writer suggested the following main groups, both for clinical teaching and for systematic work:—(1) Developmental errors: (*a*) congenital; (*b*) at puberty. (2) Vascular changes. (3) Mechanical lesions. (4) Results of infection. (5) Progressive conditions: new growths, overgrowths, cysts. (6) Retrogressive conditions. Any arrangement with main divisions such as these had many advantages in teaching. It was logical and complete, there was no cross-classification, and the groups were mutually exclusive. They were already familiar to the student through his pathological work, and they were few enough to be easily remembered.

SECTION OF SURGERY.

AT a meeting on March 12th, Mr. CLINTON T. DENT in the chair, Mr. JOHN MURRAY described a case in which a *Calculus of the pancreas* had been removed by operation. The first symptoms commenced twenty-two years ago, and consisted of attacks of epigastric pain lasting about two hours, unaccompanied by vomiting. These symptoms continued on and off for seven or eight years, when for two years the patient was practically free from pain. The attacks then became more frequent, and were sometimes accompanied by vomiting, jaundice, and cardiac irregularity. A diagnosis of gall stones was made and a cholecystotomy performed. A stone was found in the ampulla of Vater, but whilst enlarging the wound the stone disappeared, and it was thought to have slipped into the duodenum, so the wound was closed. At the end of six weeks another attack occurred, epigastric pain accompanied by vomiting and jaundice, the scar broke down, and a quantity of bile escaped. The abdomen was opened and a stone found in the same position, and was removed by turning the second part of the duodenum to the left. The stone proved to be a pancreatic calculus 12 mm. in diameter, the nucleus of which was denser than the exterior. This was the first time on record that a pancreatic calculus had been removed by this route. Mr. CUTHBERT WALLACE, in a paper on *Multiple growths in the great gut*, recorded a series of cases of carcinoma of the colon associated with another growth below or with polypi simple or malignant in nature. He divided his cases into four groups, and offered the following points for discussion: Whether the polypi below a malignant growth were produced by implantation of cells broken off from the mass and carried down by the faeces, and whether the polypi above the growth were produced by a regurgitant flow of faeces carrying up malignant cells. When two carcinomata were present in the large intestine, whether the upper one was always the primary and the second produced by implantation of malignant cells. Mr.

GORDON WATSON thought that multiple polypi were usually a precursor of carcinoma. He recalled a case in which no polypi could be seen by the sigmoidoscope, yet *post mortem* three months later numerous polypi were found growing from the large intestine below the growth. Mr. SYMONDS said that in the majority of cases no polypi occurred below a carcinoma of the large intestine. He had seen a case in which numbers of polypi had disappeared spontaneously. Mr. W. G. SPENCER, described the case of a boy, aged 5 weeks, who was admitted suffering apparently from hydrocephalus internus, and exhibited marked *Intracranial tension*, rigidity, frequent vomiting, and screaming fits. With the object of making a communication between the cerebral ventricles and the subdural space, the skull was trephined, when all the fluid was found in the subdural space. In order to afford an escape for the fluid, several attempts were made to drain it into the subcutaneous tissue. Finally, a communication with the nose through the ethmoid plate was set up, so as to produce the condition causing cerebro-spinal rhinorrhoea which has followed accidents. This gave relief from tension until the child's death some months later, when it was found that the cerebral ventricles had ruptured into the subdural space, and the membranous sac representing the cerebral cortex had collapsed. In a note on *Multiple fibromata of the tunica vaginalis*, Mr. G. H. MAKINS described the case of a man, aged 26, who as long as he could remember had had a lump behind the right testicle. It had gradually increased in size, and was dissected away from the testicle, and proved to be multiple fibromata growing from the tunica vaginalis. The cases that had been recorded were those of single fibromata, which were often of large size and enveloped the testicle. The testicle had often been removed with the tumour, which was quite unnecessary. The cause was usually ascribed to some injury, but in this case no such history could be obtained.

PATHOLOGICAL SECTION.

AT a meeting on March 19th Dr. C. RUSS made a communication describing a *Modification in the technique for opsonic estimation*, by which some degree of diminution in the sources of error was effected. The author rigidly excluded the presence of red cells, which he thought hindered the opportunity of the leucocytes for bacterial ingestion. The white cells were collected by allowing them to fix themselves, from the blood, to the sides of a small glass chamber, from which they were afterwards washed off with salt solution. In order to equalize the opportunity for ingestion, moreover, the capillary tubes containing the mixture of leucocytes, serum, and bacteria were kept slowly revolving in the incubator—not on their long axis, but radially, set as the spokes of a wheel. Using staphylococcus as the bacterium, there were variations even by this method in the number of micro-organisms ingested by individual cells, ranging from zero to 14; under the ordinary method the maximum number ingested was considerably higher. Dr. H. W. CROWE gave an account of the *Incidence of streptococci* in urine, based on extensive bacteriological examination of the urine from healthy persons, and in various kinds of disease. None of the urine was withdrawn by catheter, and it might be objected, therefore, that the bacteria found were furnished from the urethra. The urethra was flushed out by allowing a certain amount of urine to pass first, and the rest was received for examination. In a certain proportion of cases it was sterile. In the other cases it contained one or more of four different bacteria. The best known, so found, was the urethral streptobacillus of Pfeiffer, which occurs in the normal canal. The other micro-organisms comprised two forms of coccus and a diphtheroid bacillus. Dr. H. C. ROSS recorded some observations on the *Mitotic figures* induced in lymphocytes. When treated with extracts of dead tissue or with creatin, etc., the appearances, which were very evanescent, were interpreted, not as being degenerative, but indicative of an anomalous mode of mitosis; the chromosomes, in place of being confined to the central parts of the cell, became disposed at the periphery. Dr. W. NICOLL described the *Condition of the blood* in dogs which he had infected with the larvae of *Ankylostoma caninum*. The disease was particularly well known in America, and produced anaemia in the dog. The work of the author showed the anaemia to be of the secondary type, and due to the haemorrhage from the gut. No eosinophilia was observed in the dogs experimentally infected, although this was present in the natural disease.

OXFORD MEDICAL SOCIETY.

AT a meeting on March 8th, Mr. ANGLIN WHITELOCKE, President, in the chair, Mr. L. W. SEYMOUR, in a paper on *Epidemic plague in India*, based on his own experiences as a medical plague officer during two severe outbreaks (1897–98) in Scinde, said that in the second epidemic he had obtained a 75 percentage of recoveries by the administration of a mixture of carbolic acid and quinine internally with continuous soakage of the glands externally with carbolic oil (1 in 30) on lint. In addition to his own experience of success with carbolic and quinine through a course of many years in all classes of septic and infective diseases, and as giving rationality to this treatment, he referred to the fact that Kitasato had found that growth of the bacillus did not occur in cultures after exposure for one hour to a 1 per cent. solution of carbolic acid (roughly 4 minims to the ounce), and that, in his experience, the addition of the quinine produced an intensive effect. The extension of plague seemed undoubtedly to depend more upon place infection than on direct transmission from person to person.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on March 20th, Dr. F. H. JACOB, President, in the chair, Drs. PERCY E. and STANLEY TRESIDDER read a joint paper on the *Treatment of syphilis by salvarsan*. The treatment should not be employed in persons suffering from severe concomitant constitutional diseases, such as diabetes, tuberculosis, and cardiac disease, nor in debilitated and old or very young subjects. They used the intravenous method, giving two injections within a fortnight, and followed them by a course of mercury. The patients were kept in bed for twenty-four hours before and forty-eight hours after the injections. As a rule, there was a slight rise of temperature, accompanied by general malaise; but these symptoms soon passed off and generally the patients were quite recovered about six hours after the injection. The diagnosis should always be confirmed by a Wassermann test, and this test should guide the subsequent treatment. As a rule, a "partial positive" test was obtained six weeks afterwards, and a further course of mercury soon turned this into a negative Wassermann reaction, and all the symptoms of syphilis disappeared. The immediate results were especially marvellous in cases of skin and mucous membrane lesions. In cases of congenital syphilis the suckling mother was injected, and, although her milk contained no arsenic, yet the syphilitic symptoms rapidly disappeared in the child. They had now employed the drug in nearly 100 cases during a period of over a year. They injected 0.6 gram, and had never had an alarming symptom.

LIVERPOOL MEDICAL INSTITUTION.

AT a pathological meeting on March 14th, Dr. PATERSON in the chair, Mr. ADAIR-DIGHTON showed a large *Osteochondroma* removed from the auricle under cocaine anaesthesia. It was of interest on account of its huge size, and also because it was diagnosed, previous to removal, as epithelioma. Mr. BICKERSTETH read a note on three specimens of *Breast tumour*, which he considered to be fibroadenomatous in character. The cystic nature of some specimens was due to haemorrhages, which might cause a rapid increase in the size of the tumour. The exhibitor laid stress on the importance of macroscopic pathology as well as microscopic, and referred to old writers who had described these tumours accurately. Mr. PAUL said the adenomatous tumours of the breast commenced in two ways—one as a periacinous growth and the other an intracystic vegetation. The former developed into the fibro- or myxo-adenomata, and the latter into the cystadenomata. Though the two when fully grown might show points of resemblance, they could always be distinguished from each other, and were really essentially

different, more so even than acinous and duct cancer. Dr. ERNEST GLYNN, in a note on the *Detection of anthrax in industrial material*, pointed out that the disease appeared to be spreading among domestic animals, and consequently a larger number of agriculturists were becoming infected. It was difficult to demonstrate anthrax spores in industrial material; two methods were commonly used, namely, agar plate cultures and inoculation of guinea-pigs. The latter method seemed the better, and by its means anthrax spores had been found in 21.3 per cent. of 141 samples of raw hides, wool, etc., examined. Dr. BLAIR BELL described a new clinical method of estimating the amount of *Calcium excreted in the urine*. It consisted in centrifuging and measuring the amount of calcium oxalate precipitated by oxalic acid, the phosphates being dissolved with acetic acid in a calibrated tube. The estimation was made by comparing the amount precipitated from the urine with that obtained in a similar manner from an artificial standard urine containing a known quantity of calcium. Sir JAMES BARR said that the profession was very much indebted to Dr. Blair Bell for the great amount of work which he had undertaken in order to determine clinical method for accurately estimating the amount of lime in the urine. This apparatus, which he now showed, would fulfil all the necessities of clinical work in respect of estimating the lime salts in the urine. His own method for estimating the amount of lime in the urine was a very simple one. He took an ounce of urine, neutralized it with a little ammonia, then added concentrated solution of oxalic acid with 5 per cent. of strong acetic acid. This precipitated the lime as calcium oxalate, and all the phosphates were dissolved by the acetic acid. With some experience the eye soon recognized what was normal and what was abnormal. He also showed that the excretion of lime by the kidneys was much greater than was usually supposed. Dr. H. R. HURTER expressed surprise and satisfaction that the results obtained by Dr. Blair Bell's method had been shown to coincide so closely with quantitative chemical estimations. He suggested the possible employment of a saturated solution of sodium sulphate as an alternative reagent for precipitating the lime salt.

A CORRECTION.

In the account of the paper on the treatment of diabetes mellitus read by Dr. O. T. Williams and Dr. Mildred Powell at the meeting of the Liverpool Medical Institution on March 7th, and reported in the JOURNAL of March 23rd, it was stated (p. 674, lines 21 to 23) that "In the study of the cases treated by diastase there was *an* obvious action on nitrogen or carbohydrate metabolism," etc. The report should have stated that "there was *no* obvious action," etc.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on March 1st, the President in the chair, Dr. J. B. HELLIER, in a paper on *Vesicular mole*, described two cases in which excessive vomiting in pregnancy had been due to such cause. It was sometimes very difficult to distinguish the malignant form at an early stage from the benign form, the proliferation of the trophoblastic layer in the two forms respectively being one of degree rather than of kind. Mr. WALTER THOMPSON described a case on which he had recently operated successfully for *Chorion-epithelioma* following vesicular mole. Dr. T. CHURTON showed a child aged 3, in whom obliteration of the hepatic veins had produced rapidly recurring ascites. This was finally treated by incision, and recovery occurred with dilatation of the superficial abdominal veins. Mr. J. F. DOBSON showed a gall-stone removed from the ileum where it had produced acute intestinal obstruction, and also gall bladders which had been in fistulous communication with (*a*) the colon and (*b*) the duodenum. Mr. MICHAEL A. TEALE showed two sisters, each of whom had *Congenital dislocation of the lens*.

MANCHESTER MEDICAL SOCIETY.

AT a meeting on March 6th, Dr. E. S. REYNOLDS, President, in the chair, Dr. W. FLETCHER SHAW, in a paper on the *Treatment of placenta praevia* based upon 100 consecutive cases, said that the best treatment for both mother and child was to leave Nature alone, provided the haemorrhage was not very great and the doctor could remain in the house until the labour was over. If the haemorrhage were more severe, manual dilatation of the cervix, followed by rapid extraction of the child with forceps or version, gave the best results. Simple podalic version gave excellent results to the mothers, but generally sacrificed the child. Packing, Champetier de Ribes's bag, and Caesarean section he did not advocate for this condition. Dr. C. PAGET LAPAGE, in a paper on certain forms of *Fever of obscure origin* in infancy and childhood, drew attention to otitis media as one common cause thereof. Fever, when due to blood diseases and Hodgkin's disease, might be either acute or chronic with exacerbations, and in these cases there might be no evidence of the cause until the blood was examined. Infection of the genito-urinary tract with the *Bacillus coli communis*, either as an acute pyelitis or in a less severe form, was a very important cause, and its existence pointed to the need of careful examination of the urine in infants. Other causes were gastro-intestinal disturbances, such as chronic intestinal indigestion, recurrent fever due to excess of carbohydrates, and even over-feeding with breast milk.

UNITED SERVICES MEDICAL SOCIETY.

AT a meeting on March 13th, Major WAGGETT, R.A.M.C. (T.), in the chair, Fleet Surgeon A. GASKELL, R.N., in a paper on *Dust traps* and their dangers on board ships, said that since a ship of war was necessarily overcrowded in point of cubic space per man, the dangers that were represented by dust were even greater on such ships than on shore. There should be a close study of hygiene by the officers of the constructive branch of the navy in order that corners and parts difficult to keep clean should be as far as possible eliminated during the building of the ship. The old rough "cork-paint," which in the past was so freely used as a covering of metallic surfaces, was a great dust collector, but was not in evidence in the most modern ships. The material used at present in covering steel decks and the method followed of laying it were, however, fruitful causes of accumulations of dirt, dust, and damp. He suggested the substitution of asphalte or some other similar material. One point for satisfaction was that ships were now being fitted with disinfectors. They might also be fitted with some form of vacuum cleaner.

HUNTERIAN SOCIETY.

AT a clinical meeting at Guy's Hospital on February 28th the interesting proceedings included an *x*-ray demonstration in the medical radiography department by Dr. A. C. JORDAN. The cases shown included that of a woman of 32 who, owing to the nature of her pain, was thought to be suffering from gall stones. It was found, however, on *x*-ray examination after a bismuth meal, that the pain was due to a duodenum which was greatly elongated and distended to more than double the normal diameter by kinking at the duodeno-jejunal junction. The duodenum was observed contracting vigorously for seven or eight minutes before it finally succeeded in expelling a portion of its contents into the jejunum through the kink. Subsequent examinations revealed the fact that there was great stasis at the lower end of the ileum, amounting to more than twenty-six hours; this stasis caused the lower coils of the ileum to be dragged down with the caecum into the lowest part of the pelvis. The jejunum was thus pulled upon, with the production of the duodeno-jejunal kink already described. Thus the duodenal distension was shown to be secondary to the stasis in the ileum.

HARVEIAN SOCIETY.

AT a meeting on March 14th, Dr. H. J. MACEVOY, President, in the chair, Dr. R. H. COLE defined *Hypochondriasis* as a subjective state of ill health which was more or less chronic, and was out of all proportion to any disorder of the bodily mechanism. The hypochondriac was one who was painfully conscious of his organic sensations, these

dominating his personality to the detriment of impressions from without. The conducting medium of the sympathetic system had not been found to be defective, and he questioned whether the condition was the result of toxins, or was due to an anomalous constitution of cortical neurones, possibly those connected with the visceral representation in the Rolandic area of the brain. The speaker's remarks were based on a study of 50 of the graver cases that had been under his close observation; most of these cases required certification, owing to disorder of conduct dependent on illusions or delusions. These cases all belonged to one of the two classes of hypochondriacal melancholia or hypochondriacal paranoia, and were not associated with any obvious bodily disorder. The milder paranoiacs derived benefit from change of surroundings, but the melancholics required rest and quietude. Forcible feeding was resorted to in all cases of refusal of food. Mr. V. Z. COPE, in a paper on *Latent surgical disease* described the condition as one manifested by derangement of function, alteration in physical characteristics, or simply pain. Function varied normally within such great limits that early changes due to disease were easily missed. Alterations in size and shape of internal organs were not detected early unless important structures were subjected to pressure; pain was an inconstant symptom, inasmuch as viscera supplied by the sympathetic system were not sensitive to ordinary stimuli. Latency was a feature of acute disease, both at its inception and again after the acute stage; the early symptoms of an acute appendicitis might correspond to an advanced pathological process, and the condition sometimes appeared quiescent even when an abscess had formed. Chronic infections of mucous membranes which were furnished with diverticula and crypts frequently gave no symptoms except by occasional exacerbations, which were mistaken for reinfection; nasal sinusitis and chronic gonorrhoea were cited as examples. The chronic granulomata and neoplasms were the common classes of disease which remained latent. Tuberculosis was especially prone to give no symptoms when it attacked the peritoneum or kidney; syphilis was frequently latent for long periods, and he had seen a case of actinomycosis of the appendix which gave rise to no abdominal symptoms. Carcinoma of the colon and rectum was commonly latent for a very long period, and so too was carcinoma of the cervix. Duodenal ulcer sometimes gave rise to no pain of any description; the first sign might be a severe haemorrhage or general peritonitis. All the remarks made in the paper pointed to the important conclusion that first symptoms often meant long-standing disease. The practical consequences of such conclusion were obvious.

LONDON DERMATOLOGICAL SOCIETY.

AT a meeting held on March 19th Dr. MORGAN DOCKRELL, in a paper on *Lichen and lichenification*, deprecated the loose nomenclature used by writers on these subjects, and gave a historical sketch of the use of the terms from the time of Hippocrates. The word "lichen" was derived from the Greek, and, like some other words used in dermatology, was originally a botanical term. In the past the word "lichen" and its modifications had been used to describe many skin eruptions, but the term should now be restricted to one disease. The use of the name "lichen acuminatus" to designate pityriasis rubra pilaris had only led to confusion. He also deprecated the use of the term "lichenification," which seemed to imply some relationship to "lichen planus." It was really used to describe a phase which occurred in many diseases, but was distinctive of none; it consisted generally of a red thickened patch, the result of chronic inflammation, in which the normal markings of the skin were unduly emphasized and enclosed glistening angular surfaces somewhat suggestive of the burnished surfaces of the papules of lichen planus.

MESSRS. DE DION BOUTON have recently issued a pamphlet entitled *The Doctor and the Car*, containing reprints of a large number of letters addressed last year to the editor of the *Autocar* in response to a request that medical users of automobiles would supply him with an account in detail of their experiences as to the cost of upkeep and use. The pamphlet also gives a list of the names and addresses of over 900 medical men who use the cars of the firm.

Reviews.

PREHISTORIC JAPAN.

EVERY book which contains a clearly written account of an author's researches, especially when these are directed towards laying bare the early history of an interesting people, must appeal not only to the expert, but also to the general reader. In his *Prehistoric Japan*[1] Dr. NEIL MUNRO has written an important and an interesting book on the early history of the Japanese; it is based chiefly on the explorations he made of the ancient refuse and shell strata which mark the settlements of the very early inhabitants of Japan. In the various layers of the refuse deposits, the total depth of which was often 8 ft. or more, Dr. Munro discovered well-worked flints (neoliths), fragments of pottery, and other remains of a primitive people, thus carrying the history of Japan back to a period about 5,000 years ago. Traces of these early Japanese settlements are extremely numerous; some 4,000 of them are already known. In the course of his excavations Dr. Munro was able to settle definitely who these neolithic inhabitants of Japan were. He unearthed in and beneath the deepest strata human remains which possess characters definitely assigning them to the Ainus, of whom some 17,000 still survive in the North Island (Yezo), and in the Sakhalin and Kurile Islands. It may be affirmed with certainty, on the evidence produced by Dr. Munro, that the neolithic inhabitants of Japan were Ainus. They belong to a primitive race, essentially Mongolian in nature, and yet with other features, such as their extreme hairiness, which show that they are related to the more primitive inhabitants of North-Eastern Europe.

Britain and Japan have much in common. The one is visible from the western shore of Europe; the voyager between Corea and Japan finds land in sight all the way. The story of the settlement of each island is a prolonged series of invasions from the opposite continental shores. The Yamato people, the ancestors of the modern Japanese, began to arrive in their future home somewhere between 1000–500 B.C., carrying with them a civilization of the bronze age. They made their footing good much in the same way as the invaders of Britain did—by extermination and by intermarriage. Their language replaced the native speech. The conquering race brought an elaborate burial system with them—the same system as was brought to Britain by the races which built the dolmens, barrows, and other stone sepulchres. Much of the past history of Japan has been learnt from the objects found in these ancient tombs. Even at that early date the artistic instincts of the Japanese are apparent.

The pall of darkness which hung over prehistoric Europe is being gradually dissipated. It is not so long ago since we were content to begin the history of the British people with an account of the races who built the barrows; now we can trace man's history in Britain almost to the close of the Pliocene period, or, according to some, to a still earlier date. Dr. Munro is fully alive to the fact that the history of Japan does not begin with the men who lived on the neolithic refuse sites; he has searched older formations and deposits and found traces of palaeolithic man in Japan. Hitherto our eyes have been too steadfastly fixed on Europe during our prehistoric researches; we now want to know what the rest of the world was doing in those early times. We see from Dr. Munro's account that in the neolithic period Japan was widely inhabited by a people of a considerable civilization, and we cannot doubt that this was also true of the neighbouring continent. We realize, too, that East and West the same processes were then at work as we see in the world of to-day—namely, one race conquering and expanding, another losing and diminishing. The law holds true of all times; it must also be that the conqueror of yesterday becomes the conquered of to-day.

ACROMEGALY.

DR. MARK'S book on *Acromegaly*,[2] a disease from which the author is himself a sufferer, is both interesting and remarkable—interesting in that the work contains a very

[1] *Prehistoric Japan.* By Neil Gordon Munro, M.D. Edinburgh: William Bryce. (Pp. 705, 421 figures, 2 charts.)

[2] *Acromegaly: A Personal Experience.* By Dr. L. P. Mark. London: Baillière, Tindall, and Cox. 1912. (Med. 8vo, pp. 168; 1 plates. Price 7s. 6d. net.)

detailed account of the symptoms of this rare disease, and remarkable that one who from his narrative has suffered nearly continually for the last thirty-two years should be able to continue his avocation. The author gives a table of his family history, numerous members of which suffered from tumours, but none from acromegaly or gigantism. The first signs of the disease presented themselves at the age of 24, and as the author is now 56, the case is one which would at the present time be included under Sternberg's definition of benign acromegaly. The author has suffered from most of the symptoms associated with this disease, but lays particular stress on a triad of symptoms—namely, faceache, headache, and what he calls the acromegalic state. The faceache was always on the left side, and was always brought on by cold winds, and the headache has been constantly present during some time of the day for the last twenty-five years. By the acromegalic state the author means a general feeling of drowsiness, intense fatigue, and intolerance of all sounds or light, associated with giddiness, shortness of breath, which becomes irregular on any exertion, but without loss of mental power. At this time also the author considers his face, hands, and feet enlarge, but decrease in size when the "state" has passed off. The author does not seem to have suffered from hemianopsia, but hypermetropia and astigmatism were well marked at one time in both eyes, but decreased as years passed, and disappeared in the right eye altogether, but only to return. This is an uncommon occurrence, but has been noticed before by Schlesinger and others. It is unnecessary to go into detail of the various other symptoms, such as nasal troubles, aural affections, lacrymation, and the like, as they are all well known in connexion with the disease, but it may be noted that glycosuria, so frequently present in acromegaly, has never been found. We may, however, note that enlargement of the tongue, which the author states he has not seen mentioned in any English textbook of medicine, finds a place in Allbutt and Rolleston's and Osler and Macrae's *Systems*. There are some excellent photographs showing the gradual progress of the disease during the course of years; a radiogram of the right hand, in which the stalactites over the phalanges are well shown; and an equally excellent radiogram of the skull, showing the enlarged sella turcica. Mention may be made of an interesting photograph of the statue of a woman in Rheims Cathedral, evidently suffering from this disease. Dr. Abraham adds a note on the hairs, Dr. Jones on the condition of the feet, Mr. Yearsley on the ears, and Professor Keith a tracing of various measurements of the head. It has been frequently stated with reason that medical men are not good diagnosticians of their own complaints; and if evidence were wanted, we have it here. The author suffered from the disease for nearly twenty-five years before he discovered what was obvious to many of his medical friends. We have read this book with much interest, and can warmly recommend it to medical men desirous of obtaining a knowledge of the disease. We sympathize with Dr. Mark in his affliction, and at the same time express our admiration of the fortitude with which he has borne his sufferings.

CHEMIOTHERAPY: SALVARSAN.

To those who are interested in chemiotherapy, particularly in its application to syphilis, the volume of the Oxford Medical Publications, by Professor EHRLICH and Mr. J. E. R. MCDONAGH, on "*606*" *in Theory and Practice*,[3] will specially appeal. The work gives an accurate and painstaking account of Ehrlich's theories which culminated in the discovery of the properties of "606." The number applied to the drug is testimony to the perseverance of the investigators, for the powder now known as "salvarsan" was the 606th preparation investigated before satisfactory results came. The chemical term showing its constitution is given, but its mode of manufacture is not told in this work. The drug must be used in a particular way to obtain its effects. As with other arsenical compounds, toleration may be acquired if the administration is by small doses over a lengthened period. It is necessary, therefore, for the dose to be lethal to the spirochaetes and the *therapia magna sterilisans* obtained at once. Salvarsan is now generally administered intravenously. The subcutaneous and intramuscular methods are painful, and in the first case the drug may become bottled up in the tissues, while in the second its absorption into the circulation is too slow, and amounts to a continuous exhibition of a small dose from a central dépôt. The constitutional effects are fully described, and tables of the rate of elimination are included in the text. The accidents which may occur are treated categorically, and it is interesting to find that Ehrlich and his assistants have not been able to track to their origin the stories of grave nervous lesions alleged to be due to this drug. Their position is that of experimenters in a wide field, and they admit freely that they do not know, and cannot know, the varied effects produced by salvarsan under many different conditions. The experience of many thousands of cases has shown them quite clearly that the drug is parasitotropic for the *Spirochaeta pallida*, and that it is not organotropic for the human being under ordinary conditions. The destruction of a large number of spirochaetes will set free in the circulation their toxins and the immediate effect of a sufficient dose of salvarsan will in the human organism be that of the action of the arsenic *plus* the liberated poisons. This is indicated by the rise in temperature, sickness, vomiting and diaphoresis, which occur within a few hours, but generally pass off within the next twenty-four hours. The authors repudiate the suggestion that one dose is sufficient, and their most recent directions are to repeat the maximum dose of 0.6 gram in seven days if the case seems to demand it. This is quite in accord with our own experience. We have known a number of cases where the Wassermann reaction was markedly positive fourteen days after a full dose of salvarsan. The explanation offered is that in less vascular parts of the body most favoured by the *Spirochaeta pallida* the quantity of the drug is insufficient to destroy the organism completely, though its activity may be diminished. The exhibition of a second dose is, therefore, well calculated to complete the cure. The effects on the nervous system are dealt with elaborately; every case is discussed on its merits. For the most part, the symptoms are considered to be syphilitic manifestations pure and simple, and not the effects of the drug; many of them have been effectively treated by a repetition of the dose. The authors seem disposed to think that mercurials and iodides are not to be laid aside permanently, as they suggest: for example, that where a neuro-recurrence takes place involving the optic or auditory nerve, it may disappear with vigorous mercurial treatment. We most heartily commend this volume to the notice of all sections of the profession, as it is a succinct account of this method of treatment, and a notable contribution to the literature of a subject which has probably provided a theme for more discussion than any other in the history of medicine.

We have already noticed in the JOURNAL of December 9th, 1911, p. 1565, the German edition of EHRLICH and HATA'S work on experimental chemiotherapy of spirilloses. A translation of the book by Mr. A. NEWBOLD and Dr. ROBERT W. FELKIN has now been published.[4] The work consists of details of the labours of Ehrlich and his many collaborators in establishing the experimental basis of the chemiotherapy of spirilla, written by Dr. Hata. The experiments were made first in relapsing fever, then in spirillosis of fowls, and, lastly, in syphilis of rabbits, and were conducted with various substances, some aniline dyes, and a long series of arsenic compounds, until finally the famous "No. 606" was reached. There are also three short papers on different branches of chemiotherapy by other workers; and the third division of the book is taken up with Ehrlich's contribution. Ehrlich's paper shows that his discoveries in chemiotherapy have not been the result of blind groping in experimental darkness, with here and there chance illuminating gleams; they are the result of lifelong devotion to the elucidation and chemical explanation of a principle. In chemistry the law applies, *Corpora non agunt nisi liquida*, so in chemiotherapy, he argues, may we not say, *Corpora non agunt nisi fixata*, which

[3] "*606*" *in Theory and Practice*. By Geheimrat Professor Dr. Paul Ehrlich and J. E. R. McDonagh, F.R.C.S., Surgeon to Out-patients, London Lock Hospitals. London: Oxford University Press; Henry Frowde; Hodder and Stoughton. 1911. (Roy. 8vo, pp. 144. 7s. 6d. net.)

[4] *The Experimental Chemotherapy of Spirilloses*. By Paul Ehrlich and S. Hata. Translated by A. Newbold and revised by Robert W. Felkin, M.D., F.R.S.E., late Lecturer on Tropical Diseases, Edinburgh Medical School. London: Rebman, Limited. 1911. (Roy. 8vo, pp. 181; 34 tables, 5 plates. 12s.)

dictum may be read that parasites can only be destroyed by those materials for which they have a certain affinity thanks to which they are "anchored" by the bacteria.

EMBRYOLOGY FOR OBSTETRIC STUDENTS.

TREATISES on embryology are usually expensive, and they contain much which is of no direct value to the medical student. Yet the doctor in the most limited sense of that word cannot dispense entirely with science. This truth applies to obstetrics and gynaecology as much, if not more, than to any other branch of the healing art, as they require the co-operation of the sciences of embryology and pathology. For these sciences make up the grammar of reproduction, development, and disease incidental to generative physiology. Dr. R. W. JOHNSTONE has therefore rendered a service to the obstetric student in preparing his *Outlines of Early Development*,[5] which is really a grammar of its subject. It bears the *imprimatur* of Sir HALLIDAY CROOM, who in a preface certifies that the manual is a concise and careful sketch, and has been written at his request. The early development of the ovum is made as clear as possible, so that when the student reads about chorionic villi, syncytium, and trophoblast he, recalling this instruction, may understand fairly what those words signify, or may recall his elementary knowledge by a brief glance at a work of reference. Book knowledge is, unfortunately, all that he can rely upon, as it is only the specialized embryologist and pathologist who can acquire a practical knowledge of the subject in question. Dissections of the heart and specimens showing valvular disease, also preparations of the popliteal artery and aneurysm of that blood vessel are always available; the student can inspect them with his own eyes, and the "post-graduate" can look them up in a museum. But both must take a great deal on trust when they face embryological questions. Hence the value of Dr. Johnstone's work, which is a clear summary of the researches of embryologists. The development of the placenta and the nature of the villus is clearly set forth, and the elements of the decidua explained more lucidly still, which is satisfactory, as the student must learn why chorionic villi should be sought for in blood clots removed from Douglas's pouch, and must understand that an extremely malignant disease of the uterus is observed after the puerperium, or in association with vesicular mole, or even independently of gestation. In other words, he will acquire a fair idea of what is meant by the word "chorion-epithelioma." Lastly, in regard to that disease, we are reminded that most of the diagrams in the *Outlines* are good; but we think that a few more should be given. They would promote the mental digestion of the crowd of names inextricably associated with embryology in general and the histology of the placenta and decidua in particular. The diagram of a section through the placenta and adjacent uterine wall, at p. 21, is very clear; but Fig. 13 should be accompanied by a good big diagrammatic sketch of a villus and the contiguous decidual structures seen in vertical section, so as to throw more light on the relations of Langhans's layer, syncytium, and decidua, a sketch such as is to be found in Hart and Barbour's *Manual of Gynaecology*. Whilst commending Dr. Johnstone's manual to the student, we may add that it should prove useful to experienced obstetricians and gynaecologists as well, as they have little time for scientific study, and may well be pardoned if they fail to remember all the intricacies of embryology.

HYGIENE ON THE INDIAN FRONTIER.

LIEUTENANT-COLONEL HEHIR has compiled an extensive work on *Prevention of Disease and Inefficiency*,[6] to which General Sir O'M. CREAGH, Commander-in-Chief in India, has contributed a short preface. The work begins with an introduction of thirty-nine pages, the first section of which is headed "Brief sketch of the physical geography of India and its frontiers." Some of the subsections hardly seem to be covered by this heading—for example, "An epitome of the history of our campaigns a desideratum," "Work of Japanese medical officers in Manchuria." The statistics on page 32, which are presumably intended to show how the health of the British soldier in India has improved with the advance of sanitation in recent years, might well have been brought up to a later date than 1906, a very considerable reduction in the incidence of disease having been effected since that year.

Part I deals mainly with physical training and marching. "Combined Training, 1905," to which frequent reference is made, is now obsolete. Part II contains a lengthy survey of "General Hygiene," under which is included the sanitation of cantonments, barracks, and camps. The sections on the examination and purification of water are hardly as complete as one would expect in a work of this size, while those on air and the cooking of food contain more physiology than is quite necessary in a work on hygiene. Part IV is headed, "Prevention of disease in peace and frontier warfare in India." The introduction opens with a summary of sanitary regulations recently introduced in the home army, and devotes a good deal of space to the Japanese Medical Service during the war in Manchuria. A very full description, occupying some 150 pages, is given of all the diseases which may befall a soldier. In future editions this portion of the work might with advantage be curtailed by omitting matter such as the differential diagnosis of typhoid and typhus fever on page 505.

Part V is headed, "Medical Statistics in Indian Frontier Warfare." It consists of two pages stating the desiderata in preparing medical statistics in any campaign and one on the collection of medical statistics in the Japanese army. Part VI—"The Sanitary Service in Indian Frontier Warfare"—appears to have been written as a lecture. It sketches out the sanitary organization of the army and the duties of the various appointments in the medical service during the war; one third of the matter is devoted to a sketch of the Japanese medical organization in war. An appendix contains some statistics of Indian frontier campaigns as well as some from the Japanese army during the late war in Manchuria.

Lieutenant Colonel Hehir has attempted to deal very fully with the problems involved in the prevention of disease and inefficiency; he has produced a work which should be of service to the non-medical officer who has to face some problem in sanitation and requires some help to assist him in determining his line of action. Medical officers now receive a sound training in sanitation before joining for duty, and this book is hardly likely to offer them much attraction.

In future editions a proof reader might be employed before the work is issued to the public.

NOTES ON BOOKS.

THE three concluding volumes for the year 1911 of the quarterly publication known as *International Clinics*[7] contain between them some seventy-five papers. The vast majority of the contributors are American physicians or surgeons, and are for the most part bearers of well-known names. Between them they cover practically nearly all departments of medicine and surgery. The papers all have this in common, that they are written mainly from the clinical standpoint, and the width of the ground covered is almost sufficiently indicated, perhaps, by the titles of the sparse contributions by British authors. Sir Dyce Duckworth writes on empiricism and modern medicine; Sir James Burnet of Edinburgh on enuresis with special reference to its causation and treatment; Dr. Edward Turton of Hull on the causes and the principles of the treatment of constipation; Dr. J. W. Ballantyne of Edinburgh on morbid pregnancies under hospital treatment; and Professor Robert Jardine of Glasgow on the retraction ring as a cause of obstruction in labour. One paper is by Dr. I. L. Nascher, who is described as special lecturer in geniatrics at Fordham University. We do not pretend to know in what way this term as spelt could possible be pronounced so as to correspond in any wise with ancient usage, but its

[5] *Outlines of Early Development for Obstetric Students.* By R. W. Johnstone, M.A., M.D., F.R.C.S.Ed., M.R.C.P.Ed., Assistant to the Professor of Midwifery, University of Edinburgh; Obstetric Physician to the New Town Dispensary, etc. With a Preface by Sir J. Halliday Croom, Professor of Midwifery, University of Edinburgh. Edinburgh: John Currie. 1911. (Med. 8vo, pp. 23; 15 drawings. 1s. 6d. net.)

[6] *Prevention of Disease and Inefficiency, with Special Reference to Indian Frontier Warfare.* By Lieutenant-Colonel Patrick Hehir, I.M.S., M.D., F.R.C.P.E., F.R.C.S.E., F.R.S.E., D.P.H.Camb., D.T.M. Liv.Univ. Second edition, enlarged. Allahabad: Pioneer Press. 1911. (Sup. roy. 8vo, pp. 673; 87 illustrations.)

[7] *International Clinics.* A Quarterly of Illustrated Clinical Lectures and Original Articles. Edited by H. W. Cattell, A.M., M.D., with the assistance of many collaborators. Twenty-first series. Vols. ii, iii, iv. Philadelphia and London: J. B. Lippincott and Company. 1911. (Roy. 8vo, pp. 306, 314, 331. Four vols. a year. Price 35s. net.)

existence is interesting as showing that the possibilities of specialization in medicine are not yet exhausted. This latest addition, however, must be a somewhat depressing occupation if the mental attitude of the old towards life and death is commonly that indicated in Dr. Nascher's paper on senile mentality, a point on which many readers will have their doubts.

The small volume entitled *The Indian Medical Service*[8] may be regarded as being of a semi-official character, since both its authors, Majors B. G. SETON and J. GOULD, are in the Indian Medical Service and attached to the head quarter staff. It summarizes under suitable headings all regulations affecting the present and future of members of this service, and since much of the information supplied can otherwise only be obtained by searching through various official publications the book should undoubtedly prove useful both to those who are already officers in the service and to young medical men who still have their careers to choose. Its pages are interleaved, and the information can thus be kept up to date.

The sixteenth volume of *The Collected Papers of the Institute of Physiology*[9] at University College, London, is edited by Professor STARLING and bring together some twenty-five papers relating to work carried on at or in connexion with the Institute. Though they all practically belong to what may be described as the higher physiology, a direct clinical interest attaches to a certain number. Cases in point are the paper on end-to-end suturing of arteries by Archibald Smith, which originally appeared in our own columns, and one or two papers dealing with various visual phenomena first read by Edridge-Green at annual meetings of the British Medical Association. At the beginning of the volume is placed the obituary notice of the late Dr. W. Page May, which appeared in our columns shortly after his lamented death in January, 1910.

Modern Medical Opinions on Alcohol[10] consists of fourteen lectures by medical men, among whom are Sir Frederick Treves, Sir Thomas Barlow, Sir James Crichton-Browne, Sir Victor Horsley, and the late Sir Andrew Clark. All medical aspects of the temperance question are touched, and in most cases with commendable moderation, though Dr. Saleeby states that he has brought into the world children born drunk! There are useful suggestions for the treatment of inebriety, the essay of Dr. Ettie Sayer on the prevention and cure of intemperance being one of the most valuable in the book. Sir Thomas Barlow speaks hopefully of the reclamation of female inebriates, and lays stress on the absolute stoppage of alcohol in attempting to cure the drinker. The book should prove of value to all interested in the medical aspect of the temperance question, and to any who have to treat inebriates.

The Prussian Minister for educational and medical affairs has caused to be published a primer of first aid[11] prepared by Dr. GEORGE MEYER, under the direction of a large committee. It is intended for circulation amongst the public, and therefore contains a preliminary section dealing with elementary physiology and anatomy. A short course of ambulance instruction is sketched, and work is assigned for each meeting of the class. The illustrations are plentiful. They are chiefly photographs, and show very clearly the various modes of carrying a patient, the application of simple apparatus for treatment of wounds and fractures, and the devices for control of the main arteries. The text contains a good deal of sound advice for the care of the health of the ambulance worker himself, and also instructions for arrangement of the sick-room. There are some pungent remarks on over-indulgence in wine and beer and tobacco. The book is of convenient size for carrying in the pocket. It possesses also a full index.

[8] *The Indian Medical Service.* By Majors B. G. Seton, V.H.S., I.M.S., and J. Gould, M.B., I.M.S. Calcutta and Simla: Thacker, Spink, and Co. London: W. Thacker and Co. 1912. (Post 8vo, pp. 71. 7s. 6d.)

[9] The Institute of Physiology, University College, London. *Collected Papers*, vol. xvi. Edited by Ernest H. Starling, M.D., F.R.S., F.R.C.P., Jodrell Professor of Physiology. (London: University. 1912. Cr. 4to.)

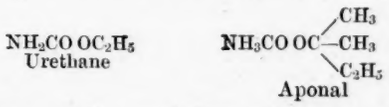
[10] *Modern Medical Opinions on Alcohol.* A Series of Lectures by well-known Medical Men. London: C.E.T.S., 4, Sanctuary, Westminster. 1911. (Cr. 8vo, pp. 129. 1s. net.)

[11] *Nothelferbuch: Leitfaden für Erste Hilfe.* Herausgegeben von der Medizinalabteilung des Königlich Preussischen Ministeriums der geistlichen, Unterrichts- und Medizinal-Angelegenheiten. Mit zahlzeichen Abbildungen im Text. Berlin: August Hirschwald. 1911. (Post 8vo, pp. 160. M. 2.)

MEDICINAL AND DIETETIC ARTICLES.

Aponal.

THE production of synthetic compounds having hypnotic properties, the introduction of new groups being regulated in accordance with the experience already obtained, has evidently not yet reached its limits. The latest substance of this kind which has been brought to our notice is aponal, samples of which have been submitted by Messrs. Widenmann, Broicher, and Co., London, E.C., the agents for its sale in this country. The compound to which this name is given is tertiary amyl carbamate, being thus a higher homologue of urethane, as the following formulae show:



Aponal is a white crystalline substance, practically insoluble in cold water and in dilute acids or alkalis, more soluble in hot water, easily soluble in alcohol. It is stated to be a mild hypnotic, causing light sleep after about twenty to thirty minutes, and leaving no drowsiness after waking. It is also supplied in tablets of 1 gram (15 grains) each.

Digalen Tablets.

The physiological action of amorphous digitoxin (digalen) was discussed by Dr. Legge Symes in an article published in the BRITISH MEDICAL JOURNAL of November 18th, 1911, and the preparations of this substance made by the Hoffman-La Roche Chemical Works, Limited, have been the subject of several notes in the JOURNAL. The company has now sent us specimens of digalen tablets; each tablet is said to correspond to 8 minims (0.5 c.cm.) of digalen. They are a convenient form for administering the drug, and are readily soluble in warm water.

Chologestin.

Messrs. Thomas Christy and Co. (London, E.C.) have submitted a sample of a mixture prepared by an American firm, put forward under the name chologestin. The formula is given as sodium glycocholate 2 grains, sodium salicylate (natural) 2½ grains, pure pancreatin 5 grains, sodium bicarbonate 5 grains in each tablespoonful, with aromatic and carminative agents. The mixture is an elegant and palatable preparation; it is intended for administration in cases of intestinal putrefaction, hepatic insufficiency, gall stone, etc. A combination of the active ingredients is also supplied in the form of coated tablets, under the name tablogestin.

Rusks.

We have received from Mr. Emil Pauly, London and Homburg, a sample of the digestive rusks which he supplies in three varieties—plain (unsweetened), medium, and sweet. The sample sent was the medium, or slightly sweet, variety; our analysis showed these rusks to contain 11.4 per cent. of nitrogenous constituents, 2.6 per cent. of fat, and 34.0 per cent. of matter soluble in water. They are crisp throughout without being unduly hard.

MEDICAL AND SURGICAL APPLIANCES.

Subcutaneous Medication.

A METHOD of introducing medicaments and vaccines subcutaneously which has been recently introduced by Messrs. Allen and Hanburys merits attention, even though applicable only to fluids which can be put up in ampoule form. In this case the "ampoule" or section of glass tubing has both its ends drawn out and besides storing the fluid to be used is made to play the part of the barrel of a syringe. With this object the upper end of its cavity is occupied by a substance which acts as a plunger when the upper drawn-out end is nicked off with the file provided and a metal rod inserted into the opening and pushed down. Correspondingly, the lower drawn-out end serves for the attachment, when its extremity has been nicked off, of a sterilized needle which is supplied with the ampoule in an hermetically sealed glass tube. To enable the piston-rod to be driven home easily there is provided a small metal sheath, which fits round the lower end of the ampoule, and in virtue of its projecting flanges acts as a finger grip. The whole device seems thoroughly practical, and is worth noting since its facilitates the hypodermic injection of fluids on aseptic lines. The name given to the device is the "Hyposol" Ampoule-Syringe. The prices of the hyposols vary according to the contents of the ampoules, but are not materially higher than those of ordinary ampoules containing the same fluids.

CERTAIN PHASES IN THE EVOLUTION OF MAN.

ABSTRACT OF THE HUNTERIAN LECTURES DELIVERED BEFORE THE ROYAL COLLEGE OF SURGEONS IN FEBRUARY AND MARCH, 1912.

BY

ARTHUR KEITH, M.D., LL.D., F.R.C.S.,

CONSERVATOR OF THE MUSEUM AND HUNTERIAN PROFESSOR.

THE ANTIQUITY OF MODERN MAN.

PROFESSOR KEITH commenced his series of lectures by stating that on October 7th of last year he received a letter from Mr. J. Reid Moir of Ipswich informing him that there was being forwarded to the museum of the College the remains of a human skeleton discovered beneath stratum of undisturbed chalky boulder clay at a sandpit belonging to Messrs. Bolton and Laughlin. The skeleton had been exposed by the workmen on the vertical face of the pit, so that Mr. Moir and those with him were able to study closely its relationship to the overlying and underlying strata. The bones lay at the junction of two formations, weathered chalky boulder clay above and mid-glacial sands below. Between the human remains and the surface were 4 ft. of a formation belonging to the deepest layers of the chalky boulder clay series. There could be no question of burial, for the various horizontal lines and markings were continued across in the strata above the bones, showing that they were in the condition in which they had been originally laid down. The person to whom the skeleton belonged had clearly lived before the overlying strata were formed, but there is some question as to the exact age of the overlying strata. Mr. Moir, who is familiar with the geology of the district, unhesitatingly assigns them to the chalky boulder clay, and this is also the opinion of the veteran geologist, Mr. W. Whitaker. Mr. John E. Marr, of Cambridge University, although regarding the overlying layers as belonging to the boulder clay formation, is of opinion that they might have "slipped" or been moved to their present position subsequently to the glacial deposition of the great sheet of chalky boulder clay, which marks for us the period of maximum glaciation. In the meantime we may safely regard the Ipswich skeleton as of very great antiquity, the balance of the evidence assigning him to the temperate period which preceded the time of greatest glaciation. In the opinion of those best qualified to judge, the major part of our river valleys have been excavated since the chalky boulder was deposited by the great ice sheet.

Before proceeding to examine the condition of the skeleton and the characters of the separate bones it will be convenient to see how the Ipswich man compares in point of age with other ancient human remains found in England. The only one which stands a comparison in point of age is the Galley Hill man. His remains were found in the 100-ft. terrace of the Thames Valley, the terrace being part of an ancient bed of the river. Mr. W. Whitaker has pointed out that the 100-ft. terrace rests on the boulder clay at Upminster, Essex, and that therefore the boulder clay formation is older than the 100-ft. terrace, and that consequently the Ipswich man belongs to a much earlier date than the Galley Hill man. Mr. Moir is able to supply very convincing evidence that this is the case. The flint implements found in the 100-ft. terrace are of a very high order of workmanship, and are assigned—if one may speak of cultures at this early date—to the Chellean and also to the Acheulean civilization. The Galley Hill man belonged to a very high flint civilization—probably the Chellean or, according to M. Rutot, an even earlier stage of culture. Now the flint implements which Mr. Moir has found in the boulder clay (the ice sheet caught them up from the land surface on which they lay) and in the mid-glacial sands which lie beneath the boulder clay, and in which the Ipswich skeleton was partly imbedded, are of a more primitive type; yet they are unmistakably the workmanship of beings showing an intelligence and skill beyond that shown by the aboriginal Tasmanians. The culture of the mid-glacial sands is very much more primitive than that of the 100-ft. terrace, and therefore presumably much earlier. It was fortunate that one with Mr. Moir's experience was near when the skeleton was exposed. He saw at once that the bones were too fragile to be removed, and, with Messrs. Bolton and Laughlin's consent, had the overlying strata cut away, and the layer containing the bones dug out in blocks. It was these blocks which were forwarded to the museum. By infiltrating them in a solution of gelatine it was found possible to expose—slowly and with great patience—the fragmentary remains of the skeleton on the upper surface of each block, thus leaving the bones attached to the underlying mid-glacial sands. By arranging the blocks it was possible to reconstruct the exact position of the skeleton. The skeleton was placed on its right side, in a crouched-up posture, with the thighs flexed against the body and the legs folded against the thighs, whilst the head was bent forwards and downwards, so that it rested between the left shoulder and the knees. The skull would have been very poorly represented had it not been that its interior was filled with glacial sand and loam, which formed a solid resistant and accurate cast of the cranial cavity. The third frontal convolution is especially well marked, and from the cranial cast accurate estimates can be formed of the main dimensions of the head. All the skeletal bones of a cancellous nature had disappeared in the surrounding strata. In the matrix one could see dimly the outlines of vertebrae and other spongy bones, but it was impossible to delineate them, so gradually did they fade into the surrounding matrix. The densest parts of the shafts of the long bones were best preserved, and it was noted that it was those parts of the skeleton which lay in the mid-glacial sand which remained; of the parts lying within the weathered boulder clay only the most imperfect fragments were preserved. Roots of plants had reached the skeleton and no doubt played a part in its destruction.

As regards the sex of the skeleton there can be no doubt; all the features preserved show it to be that of a man. His height is estimated to have been about 5 ft. 10 in. (1.780 m.). Except the Cromagnon race, all Paleolithic men yet known are of a low stature.

Professor Keith admitted that on his first examination of the remains he was grievously disappointed. The discovery at Galley Hill showed that the modern type of man was very ancient. He was not prepared, however, to find beneath the chalky boulder clay a man of the modern type; yet in teeth, in skull form, in the leading features of the skeleton, the Ipswich man does not differ in build of body from the men of to-day. Every one starts away in life with the conviction that the evolution of man is a recent event, and must have proceeded in orderly sequence from a lower stage to a higher. There can be no doubt that the Neanderthal type is lower than the modern type of man. It was expected that the Neanderthal type would disappear and be succeeded by the modern type. Experience, however, does not often justify *a priori* opinions. The discovery at Ipswich runs counter to expectations. It was expected that a Neanderthal type would be found under the boulder clay, but what was found was a modern one.

The discovery did not come as a surprise to many expert anthropologists, such as Professor Schwalbe of Strassburg, Professor Sergi of Rome, and M. Rutot of Brussels. The Chellean and Acheulean cultures, to the first of which the Galley Hill man probably belonged, precede the period of Neanderthal man—the Mousterian period. The Galley Hill man, who is of the modern build of body, lived in England long before Neanderthal men lived in France and Central Europe. Mr. Moir has pointed out that the flint implements of the Chellean period and also of the Acheulean are of a much higher order of workmanship than the Mousterian implements of Neanderthal man, and that there was reason to anticipate that the Chellean workmen would prove to be of a superior race. Indeed, when he was informed that the skeleton he had sent was of the modern type, Mr. Moir seemed in no way surprised. The workmanship of the flints from the mid-glacial sands were, in his opinion, quite in keeping with such a type.

Although the skeleton is of the modern type it must not be thought it carries no marks of antiquity on it. The condition of the bones is not unlike that of fossil bones found in the mid-glacial sands. They are light in weight, chalky in colour and texture and not highly mineralized.

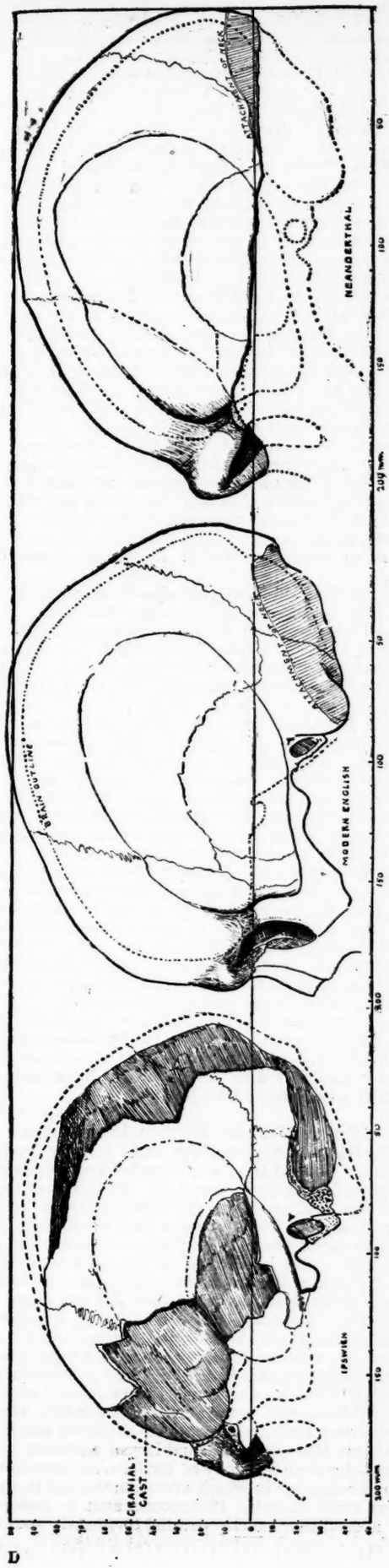


Fig. 1.—Profile drawing of the Ipswich cranium. The intracranial mass forms a cast of the brain on which the third frontal convolution is well marked. The frontal and occipital bones are fragmentary. (Two-fifths natural size.)

Fig. 2.—Modern English cranium. It is oriented on the same plane as the Ipswich cranium and drawn to the same scale as the Ipswich skull, so that their dimensions may be compared. (Two-fifths natural size.)

Fig. 3.—Profile of the Neanderthal cranium treated in the same manner as the English cranium. (Two-fifths natural size.)

Yet when a fragment is placed in 5 per cent. of hydrochloric acid it crumbles away in a manner exactly similar to bones from early Pleistocene formations, whereas all the other ancient human remains which were available for experiment possess enough of their original animal matter to retain their form when submitted to the acid test. The chief evidence, however, that we are dealing with a new type is to be found in the peculiar leg bones, especially the tibia. Hitherto our attention in studying ancient man has been directed too much to the skull. It is very probable that the tibia, being so closely associated with the human manner of walking, will serve to distinguish various stages in man's evolution. In many features the tibia of Neanderthal man recalls the same bone in the gorilla, but it is differentiated from the simian form by possessing a definitely marked anterior border or shin. In other palaeolithic races, and in all other human races, the anterior border or shin of the tibia is prominent and sharp. The shin of the Ipswich tibia is quite peculiar and unlike any form yet seen. In place of a sharp shin there is a flat surface which gradually becomes continuous with the convex inner surface of the bone. The shin is represented by a mere line which separates the anterior from the outer or muscular surface. The significance of this feature is unknown; it certainly does not represent a pathological condition, but is evidently due to a peculiarity in the gait of the individual. It is likely to prove a sure character of the Ipswich race and represent a stage in evolution. There are certain other peculiar features in the skeleton—especially in the humerus, but the imperfect preservation of that bone leaves some doubt as to their exact nature.

The teeth have short and widely spread roots and are small in size, even when compared to those of modern European races. The upper wisdom tooth is peg-shaped, thus showing an extreme degree of reduction. The crowns of the teeth are so worn that the dentine is deeply exposed and excavated. In early man we expect the teeth to be primitive in form and size, but a little reflection will show that this is not necessarily the case, for in the chimpanzee the upper wisdom teeth are often greatly reduced in size and development.

The head is of moderate dimensions: maximum length 192 mm.; maximum breadth 144 mm.; proportion of breadth to length 75 per cent.; height above ear-passages 110 mm.—a very low measurement. The forehead is retreating, but the eyebrow ridges are only of moderate development. The cranial capacity is estimated to have been about 1,430 c.cm.—about 70 below what may be expected of a modern man with a stature of 5 ft. 10 in. The peculiarity of the head is the low, flat, wide crown. The greatest width of the skull is also situated nearer the posterior end than in modern races. In these two characters—the lowness and flatness of the crown of the head and in the posterior position of its greatest width—the Ipswich skull somewhat resembles the Neanderthal type. But the other characters are very different.

The interest of the Ipswich man is the modernity of his build. In this respect he agrees with the Galley Hill man, and yet in the form of head and in the features of their skeletons these two differ very materially. They are both modern in type although very ancient in date, and represent two races which are sharply differentiated from each other and very distinct from the more primitive Neanderthal race.

The Ipswich and Galley Hill remains are not the only discoveries of very ancient man in England. In 1885 Mr. Henry Prigg described in the *Journal* of the Anthropological Institute a fragment of a human skull found near Bury St. Edmunds in a deposit of brick-earth 7½ ft. from the surface. In the same strata were found remains of the mammoth and also paleolithic flints which Mr. Reginald Smith informed Professor Keith may be safely assigned to an early date in the Acheulean period. We are therefore dealing with a fragment of a man who probably lived at a later date than the Galley Hill man, but at an earlier date than the period of Neanderthal man in France, who belongs to the Mousterian period. From Dr. Allen Sturge Professor Keith had learnt that this fragment of a human skull described by Mr. Prigg was still preserved in the Moyses Hall Museum, Bury St. Edmunds, and, through the courtesy of the chairman of that museum and of Mr. H. R. Barker, the Honorary Curator, he had been allowed to make a minute examination of this

historical fragment. It consists of a part of the roof of the skull—sufficient, when examined by modern methods, to yield fairly accurate results as to the original head form. The thinness of the bones and their form show at once that we are dealing with an individual of the modern type. There is nothing to suggest the Neanderthal race. The fragment, as Mr. Prigg suggested, is probably part of a woman's skull of rather less than average dimensions. The forehead was vertical, the top of the head wide, flat, and low, and the muscles of mastication small, yet there can be no doubt of the antiquity of the fragment. The condition of the bone shows that it is contemporaneous with the brick earth. The antiquity of this fragment may be roughly pictured when it is stated that the neighbouring valley of the Lark has been deepened by about 100 ft. since the human and mammoth fragments were washed pell-mell into the pit of brick-earth in which they were subsequently found.

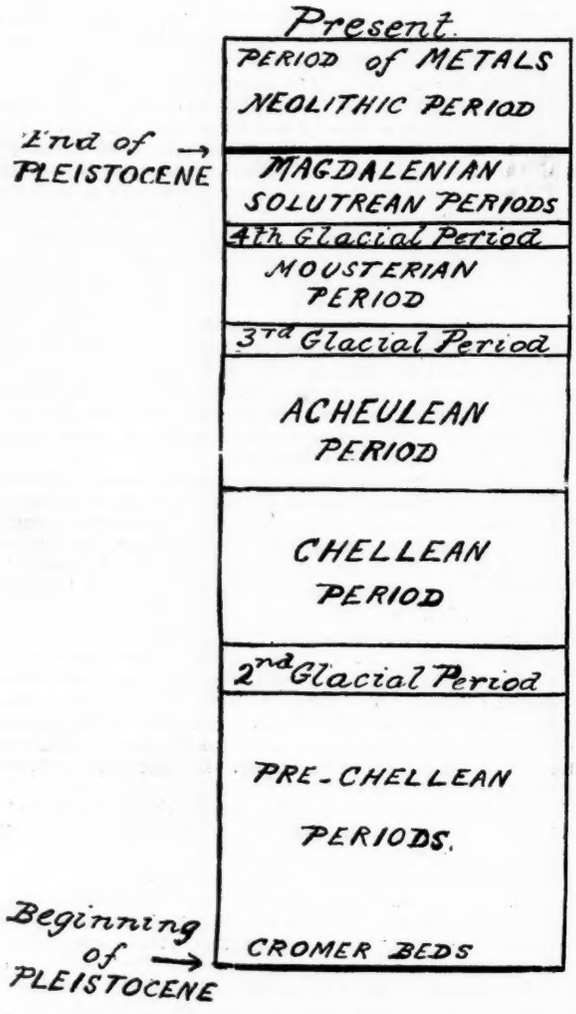


Fig. 4.—Table showing the main periods into which the Pleistocene or Quaternary epoch has been divided.

The Relationship of Neanderthal Man to Modern Races.

At the present time there are two opinions as to the relationship of Neanderthal man to modern races of mankind. The majority of modern anthropologists are of opinion that Neanderthal man gradually shed his simian features and became transformed into the modern type of man. The minority, however, believe that such a transformation is impossible, and that Neanderthal man became extinct, leaving no progeny behind him. Although the lecturer had at one time supposed that the transformation of the Neanderthal to the modern type was possible, the evidence which had accumulated in recent years had compelled him to abandon this view. All the discoveries of this peculiar race, which have been made so abundantly in France during recent years, belong to a comparatively late phase of the Pleistocene period—a period which apparently corresponds to the formation of the lowest terrace of the Thames valley and the erosion of the buried channel of the river. Long before that period, not only in England, but also on the Continent, men of the modern type existed. All the evidence which indicates the early existence of the modern type of man is now being unjustly discredited. There was the famous case of the human mandible (Moulin Quinon) which Boucher de Perthes, the founder of our knowledge of palaeolithic man, discovered near Abbeville, in the valley of the Somme in 1863. The chief objection to it is that it so nearly approaches the modern type, and that it contained a percentage of gelatine. Yet Boucher de Perthes took it with his own hand from a deep and old stratum which we now know—thanks to the researches of M. Commont—to belong to an age which precedes the Mousterian or Neanderthal period in France. The mandible is of the type we should expect in the race to which the Ipswich skeleton belongs. It is almost identical to a mandible found in a coprolite pit at Foxhall, near Ipswich, in 1855. This mandible afterwards passed into the possession of Dr. Robert H. Collyer. The lecturer had been unable to trace the fate of this valuable specimen; it was very important to obtain its recovery, because it probably lay in the mid-glacial sands—the same formation as yielded the Ipswich skeleton. Several of the Pleistocene crania found in France were pre-Neanderthal in date and yet were of the modern type. One of these was the fragment of a skull found in a volcanic formation at Denise.

Italy, like England, had yielded no trace of Neanderthal man. The cranium found in an early Pleistocene stratum at Olmo, Tuscany, was exactly of the Galley Hill type. The most remarkable and best authenticated of all discoveries of man is that made at Castenedolo, near Brescia, Lombardy, by Professor Ragazzoni between 1860 and 1880. In that region the Pliocene strata are well represented. Professor Ragazzoni when he discovered these remains was studying and collecting Pliocene shells and was familiar with the strata and with all the criteria of geological evidence. In strata belonging to an early Pliocene age and in conditions which showed that these strata had never been disturbed, he found—in a period of twenty years—parts of four human bodies, one the almost complete skeleton of a woman. Professor Sergi, who described these remains, describes them as being of the modern type. Recently Professor Keith had been in correspondence with Professor Sergi and it was impossible to break down or find a flaw in the evidence which assigns these Castenedolo individuals to an early date of the Pliocene period. Anthropologists turn away from this discovery because it runs contrary to all their preconceptions concerning the date and manner of man's evolution.

It was thus plain that long before the Mousterian period, when Central Europe was inhabited by Neanderthal man, races of the modern type were in existence, not only on the Continent, but also in England. Neanderthal man apparently never reached England.

Ancient Man and Modern Anthropoids.

During the greater part of the Pleistocene or Quaternary period there were at least two very different kinds of men in existence in Europe—man of the Neanderthal type and man of the modern type. At what point of geological history these two kinds of man had been evolved from a common stock there is as yet no evidence, but a good deal of light could be thrown on the problem by a study of the African anthropoids—the gorilla and chimpanzee. Although these modern anthropoids did not stand in the line of human descent, there could be no question that their ancestral stock did, for the resemblances between man and the African anthropoids were so many and so close that they can only be explained by a common origin. Although the African anthropoids were related to man by only a distant and very ancient cousinship, they undoubtedly represented the common ancestral stock much more closely than man did, and it was therefore possible to obtain, by a close study of modern anthropoids, some clue to the manner in which evolution worked in the very primitive forms of man. Pleistocene man in Europe presented a condition exactly parallel to what is seen to-day

among African anthropoids. The great, strong, brutal, surly gorilla exemplifies Neanderthal man; the more finely moulded, less brutal, nimble-witted chimpanzee, divided into a number of races, represents the modern forms of man. It is not to be supposed that there is any direct relationship between the human European and African anthropoid counterparts—in the one case both are men; in the other both are anthropoids. In the evolution of man and anthropoids similar physiological or evolutionary processes have been at work. In Neanderthal man the teeth are big, the muscles of mastication strong, the various bony processes of the skull from which these muscles take their origin greatly developed, while the skull is widely and strongly hafted to the neck. The gorilla shows similar characters. The various chimpanzees, like modern races of mankind, exhibit a strong tendency towards a reduction in size and development of teeth with a corresponding lessened growth of the muscles and apparatus for mastication. At birth the skulls of gorillas and chimpanzees are very much alike; the chimpanzee, as it grows up, stands still at a certain point of brutalization, while the gorilla presses on to the ultimate limit. It will, no doubt, be found that at birth the skulls of modern and Neanderthal man are very similar. Our present ignorance of the conditions which regulate our growth and development prevents us from explaining the occurrence of these similar processes in human and anthropoid races.

In acromegaly, the remarkable human disease which is believed to be due to an enlargement of the pituitary gland, characters recalling the peculiar features of the gorilla and Neanderthal man appear in the subject of the disease. It was highly probable that the immediate causes which produced these divergences in characters of skull and teeth might be due to the effects of internal secretions. By the courtesy of the authorities of Charing Cross Medical School Professor Keith was able to show the skull of a boy[1] who was the subject of a remarkable disease. On one side the teeth were large, and the jaws, bones of the face, and muscles of mastication were massive and overgrown, while on the other side the teeth were of normal size, and growth in the jaws had proceeded at a normal rate. Here Nature had produced just such an experiment as would throw light on the differentiation of the racial characters under discussion, and it was from a study of such cases that assistance was likely to be obtained in solving such problems. Professor Keith regarded the more brutal forms—Neanderthal man and the gorilla—as the more primitive, and therefore ancestral, forms; but it was possible that the ancestor may have been of an intermediate type, and that divergence occurred by the chimpanzee changing in one direction and the gorilla in another. Similarly, the human stock from which modern and Neanderthal man have sprung may have been of an intermediate form. There can be no doubt that Neanderthal man represents a primitive and yet a specialized type.

The structural differences between the gorilla and chimpanzee were undoubtedly greater than between Neanderthal and modern man. Yet the fact remains that there is no absolute criterion which distinguishes the brain of the gorilla from that of the chimpanzee. It is true, as Professor Elliot Smith has shown in his descriptive catalogue of the collection illustrating the comparative anatomy of the brain in the College museum, that, as a rule, the gorilla brain is larger and more human in its arrangement of convolutions than that of the chimpanzee, yet it was also to be kept in mind that in many cases they could not be distinguished. The marks which distinguish the gorilla and chimpanzee are the teeth, the nose, the ear, and greater size of body, but the chief difference really lay in the fact that the gorilla shows several well-marked adaptations in its feet, thigh, and pelvis, for using its lower extremities for independent support and progression. The hands and feet of the chimpanzee are climbing and supporting structures. In the gorilla they are spatulate, and formed on a plan which makes a near approach to the human form. Of the various existing anthropoids there can be no doubt that the gorilla shows the greatest assemblage of human characters.

(To be continued.)

[1] Described by the late Mr. Barwell, *Trans. Path. Soc.*, 1881, vol. xxxii.

THE CARE AND CONTROL OF INEBRIATES.

A BILL has been introduced into the House of Commons by Mr. Ellis Griffith, Parliamentary Secretary of the Home Department, and supported by the Home Secretary, to consolidate and amend the law with regard to the care and control of inebriates. It is the outcome of the deliberations and recommendations of the Departmental Committee which sat in 1908, and is a distinct advance on the existing law.

Before proceeding to the consideration of the bill, it seems desirable to give a brief sketch of the history of legislation which has culminated in the present measure.

Somewhere about 1860, or between that date and 1870, public opinion became impressed by the increasing prevalence of habitual drunkenness and by the large amount of domestic misery and poverty, lunacy, and waste of economic life value, that resulted from the unrestrained habits of those who were the victims of the condition. The closer clinical study of inebriates led to the conclusion that many of them were quasi-insane, and all of them the victims of a constitutional peculiarity; a great impetus was thus given to the demand for some special legislation for their control and treatment. At that time there was no power to interfere with the liberty of an inebriate unless he committed some offence against the law. Inebriates who were able to avoid public offences could therefore continue to be a cause of anxiety, and often serious distress, to their families before definite lunacy gave power to control them, or until death gave permanent relief. Those inebriates who rendered themselves liable to punishment by committing offences against the law were fined or imprisoned as often as they presented themselves before the courts—a course which after years of trial proved futile as a method of reform and useless as a means of protection. The futility of short sentences of imprisonment was widely recognized among prison authorities, visitors of prisons, and magistrates, who saw the same drunkards coming habitually before them in no way improved by the short periods of imprisonment.

THREE DEPARTMENTAL COMMITTEES.

A widespread feeling of discontent at existing conditions led to the appointment of the first of three separate committees which have on three occasions taken the whole question of legislation for inebriates under consideration, reporting in each instance on the necessity for such legislation, and indicating the lines upon which it should be designed. Each committee declared without hesitation that proper powers for the control and treatment of inebriates were necessary, and all three advocated, with little variation in detail, certain definite provisions which they considered essential.

The Select Committee of 1872, under the chairmanship of Dr. Donald Dalrymple, M.P., reported that it was shown by the evidence that many habitual drunkards acquired or were the subjects of a morbid condition that rendered it impossible for them to abstain or drink moderately, and that such persons caused many evils and were dangerous to the community. This committee recommended a system of sureties and detention for considerable periods in private institutions for those who could pay or in institutions maintained by the State and local authorities for those unable to contribute. The bill presented to Parliament as the result of the labours of this committee consisted of two parts, both of which dealt with inebriates who were not criminal or who were not necessarily criminal. Part I ("Voluntary") contained provisions applicable to inebriates able to pay for treatment and willing to enter retreats on their own initiative; Part II ("Compulsory") contained provisions applicable to persons who refused to be placed out of reach of drink or refused to take advantage of any means calculated to exercise restraint on their habits. Public opinion, however, at that time was not ripe for even such a measure as this, and in consequence the Habitual Drunkards Act (1879) entered the Statute Book shorn entirely of Part II. The Act as it became law authorized the establishment of retreats, but required that a person must voluntarily consent to enter such an institution before he could be detained therein. The Act made no provision for contributions by the State or local authorities towards the maintenance of these institutions.

After the Act of 1879 had been in force for some years

public attention was again drawn to the insufficiency of the existing law, to the large number of habitual inebriates untouched by it, and to the number who, in consequence of their habits, were constantly before the magistrates, and as constantly being sent to prison and released after serving a short sentence. It was pointed out that by limiting the control of inebriates to those who voluntarily submitted themselves to treatment, thus allowing all to escape control who refused to submit to it, the Act of 1879 failed, inasmuch as it was inapplicable to the majority of inebriates, and was therefore ineffectual.

Further discussion and representations, for which the British Medical Association was to a great extent responsible, resulted in the appointment of a second Departmental Committee in 1892, which reported strongly in favour of amended legislation in the following directions: (1) Greater facility for entering retreats to be afforded non-criminal inebriates who could be induced to consent to detention; (2) provision to enable the compulsory committal to retreats under certain conditions of non-criminal inebriates who refused to consent to detention; and (3) power to commit to suitable reformatory institutions persons who by reason of drunkenness brought themselves within the criminal law, or who were repeatedly convicted of drunkenness by magistrates at petty sessional courts. The report of this second committee led to the passing of the Act of 1898, which embodied the first and third of the above recommendations but ignored the second. The Act of 1898 extended the scope of the Act of 1879 in its application to persons who were willing to enter retreats voluntarily, and enabled compulsion to be applied to two other classes—namely, (*a*) habitual drunkards who were convicted of indictable offences, and (*b*) habitual drunkards who, without committing serious crimes, were perpetually being fined or imprisoned for comparatively trivial offences resulting from drunkenness. The two extremes were therefore provided for—persons who were willing to go under treatment and persons who were criminal or repeated offenders, but no power of dealing with inebriates who were not law breakers and who refused to enter institutions was provided. During the ensuring ten years many retreats were established for voluntary cases under the Act of 1879, and a fair number of reformatories for committed cases under the Act of 1898. These ten years of fairly steady work brought into prominence certain difficulties in the administration of both Acts, especially in regard to the establishment and management of reformatories and to the conditions governing the committal of inebriates to control and treatment. So urgent did some of these difficulties become that failure of the whole work seemed possible unless defects in existing legislation could be remedied.

With a view to discovering how far apparent difficulties were real, and if real, how far removable, the whole question of legislation for inebriates was again made the subject for an inquiry. A third Departmental Committee under the chairmanship of Sir John Dickson-Poynder (now Lord Islington) was appointed in April, 1908, to "inquire into the operation of the law relating to inebriates and to their detention in reformatories and retreats, and to report what amendment in the law and its administration are desirable." This committee reported to the Secretary of State in December of the same year, and submitted certain recommendations. The most important were:

(*a*) For non-criminal inebriates: (1) That an extension of the voluntary principle was desirable, inebriates being permitted as a preliminary measure to enter into a legal obligation to abstain from intoxicants; (2) that certain improvements in the condition governing the licensing of retreats and their subsequent management were desirable; (3) that a system of voluntary and compulsory guardianship should be designed for the control of inebriates; (4) that power should be given to relatives, friends, or guardians to apply for the compulsory committal of an inebriate to a retreat.

(*b*) For criminal and recidivist inebriates: (1) That conditions now governing the establishment of reformatories should be amended; (2) that greater facilities should be provided for the early committal to reformatories of recidivist drunkards; (3) that facilities should be provided for the committal of inebriates guilty of less serious criminal offences direct to reformatories from petty sessional courts.

When it is realized that each of these committees was composed of different persons, and that twenty years elapsed between the first and second and thirty years between the first and third, the unanimity of their findings is extraordinary and very instructive. It seems safe to conclude that there can be little wrong with the mode and conduct of a work which came into existence as a result of one inquiry, and has been confirmed by the recommendations of two subsequent committees. For the control and treatment of private non-criminal inebriates each committee advocated the provision of powers to facilitate the establishment and managements of retreats, and each laid stress on the desirability of placing the least possible difficulty in the way of persons who desire to submit themselves to control. The first and third committees advocated a system of legal guardianship to be exercised by friends over the person of an inebriate. All three committees recommended that power to commit an inebriate to control in a retreat on the application of friends should be given to a properly constituted court. In addition the third committee recommended a form of legal pledge to abstain from intoxicating liquor, and a provision to enable an inebriate to apply voluntarily for an order of guardianship. Concerning the criminal and recidivist inebriate, all three committees agreed as to the uselessness of small fines and short terms of imprisonment as remedies for habitual drunkenness, and as to the necessity for the special treatment of such persons. All three were in accord as to the establishment of reformatories, only showing some variation as to by whom and at whose cost these institutions shall be established. The third committee, having the advantage of ten years' experience of the control of criminal inebriates in reformatories to guide it, recommended many important improvements in the existing law, designed to make it more effectual and more easily applicable. An Act of Parliament followed each of the two early committees, the second Act being a distinct advance upon the first. The bill now before Parliament incorporates the powers of the first and second Act, and contains provisions in accordance with the recommendations of all three committees, which will turn incomplete legislation into something approximately complete.

Inebriates Bill, 1912.

Bearing in mind the foregoing history of legislation the bill now presented to Parliament is not in any sense experimental, but the product of experience and careful deliberation. The powers already possessed in the two main Acts of 1879 and 1898 are re-enacted with improvements, and considerable advance is made towards filling up those gaps that have hitherto rendered the proper treatment of inebriates exceedingly difficult and unsatisfactory.

The bill is divided into two distinct parts, the first being designed to deal with persons who are inebriates without being guilty of offences, and the second with inebriates who are convicted of crime, or have done things that militate against decency and order. Part I should be of great assistance to the physician, and Part II helps to strengthen the hands of those persons who have to deal with criminals and recidivists.

Part I.

Up to the present all persons who have been called upon to treat medically, or act in the capacity of friends to, an inebriate have often realized the hopelessness of their task; the only thing possible was to ask him to commit himself to institution care—an extreme measure to which comparatively few could be induced to consent. Further, many persons have been encountered who needed moderate restraint only, persons for whom seclusion in an institution was either too severe a measure or impossible to consider for other reasons.

The new bill provides for both milder and stronger measures than the voluntary application for admission to a retreat, the only means available under the existing law, the aim being to deal with persons earlier in their career and continue existing methods further. Should this bill become law the voluntary principle will be extended and the compulsory principle added, thus commencing with the mildest measures that may prove useful, and passing later, should these fail, to those that are stronger and more serious.

Clause 1 of the bill deals with purely voluntary action on the part of an inebriate, it enables him to sign a legal

pledge before a justice of the peace to abstain from intoxicants without applying any other restriction to his freedom of action. Should this fail, he can then apply voluntarily for the appointment of a guardian, who will be given the following powers:

(*a*) To prescribe for the inebriate a place of residence either in the house of the inebriate or in that of the guardian, or in any other place where the guardian happens for the time to be;
(*b*) To deprive the inebriate of intoxicants and to prevent him from obtaining them; and
(*c*) To warn persons dealing in intoxicants and other persons against supplying any intoxicants to the inebriate.

In the event of voluntary guardianship proving useless, the inebriate can then apply for admission to a retreat under the same conditions that now govern such action. Should any inebriate refuse to take advantage of all or any of these voluntary methods, or, having taken one or other of them, fail to keep his pledge, prove uncontrollable by his guardian, or incapable of being dealt with in a retreat to which he has been admitted, he may be proceeded against under the compulsory powers in the bill.

Clause 5 provides that:

Any relative or friend of an alleged inebriate, and where a voluntary guardian of an inebriate finds the powers exercisable by him as such insufficient to enable him to exercise proper control over the inebriate, such guardian may make a private application by petition to a judicial authority for an order appointing a guardian (in this Act referred to as a judicial guardian) or committing him to a retreat:

Provided that if the petition is not presented by a relative of the alleged inebriate or by a voluntary guardian, it shall contain a statement of the reasons why the petition is not presented by a relative and of the connexion of the petitioner with the alleged inebriate and the circumstances under which he presents the petition.

The petition must be accompanied by a medical certificate as to the condition of the inebriate (or by a certificate of refusal to submit to examination) and by a statutory declaration signed by the petitioner and at least one other person to the effect that the person against whom the order is proposed to be made is an inebriate within the meaning of the Act. Upon the presentation of the petition and such documents as aforesaid the judicial authority shall either visit the alleged inebriate or summon him to appear before him to show cause why an order should not be made against him. The proceedings before the judicial authority may be conducted in private, if privacy is desired by the alleged inebriate, and both petitioner and patient may be legally represented. If the judicial authority is satisfied he may make an order for appointing a judicial guardian or committing the inebriate to a retreat for any period not exceeding two years; the words "judicial authority" as used here meaning any judge in county courts, any police or stipendiary magistrate, or any justice specially appointed for the purpose of the Lunacy Act, 1890. Certain safeguards, powers of appeal, and other details appear in the bill to complete the clause referring to compulsory committal, but the above are the main provisions.

This power of compulsory committal will remove the main difficulty that has prevented the extensive use of previous legislation; it is absurd to expect inebriates, who do not realize their condition, to commit themselves to control—such surrender requires an amount of moral courage and an effort of will that can hardly be expected of one who is acknowledged to be incapable of managing himself or his affairs. The Departmental Committee of 1908 summed up the matter as follows:

We fully appreciate that the application of compulsory powers to persons who have committed no public offence is a strong step to take, but we are convinced that great and widespread distress is caused by such persons, and that power to deal with them compulsorily is urgently needed. We have failed to find satisfactory reasons against the constitution of such powers. It must be remembered that very few inebriates take advantage of the existing "voluntary" powers except under moral pressure, which virtually amounts to compulsion, and that the alternative to interfering with the liberty of the inebriate, is permitting the inebriate to interfere with the liberty of other people.

And again:

Although we have no means of ascertaining why all such provisions were omitted from the existing Acts, we assume that the reasons probably were: (1) That public opinion was not deemed ripe for such enactments; and (2) that the compulsory provisions were not sufficiently definite to ensure proper protection against possible abuse. We have taken both these objections into consideration, and with regard to the first, the course of recent legislation shows that the Legislature does not now hesitate to enforce restrictions on the liberty of persons whose unchecked vagaries are clearly contrary to the public weal. With regard to the second objection, it is to be remembered that the same dread of abuse was felt with respect to the detention of lunatics, a dread that experience has shown to be without foundation. . . . Moreover, we have combined with the recommendations of compulsory powers, a further recommendation to extend the principle of voluntary submission far beyond its present limits, and to give the inebriate in every case the option of voluntary submission before the application of compulsion.

The provisions now in force with regard to retreats under the Act of 1879 as amended by that of 1898 are re-enacted for the most part in the new bill, but some important changes are made in details. Up to the present retreats have been licensed by local authorities, and subsequently inspected and controlled by the Secretary of State. This unsatisfactory dual responsibility is to be removed in future, the power of both licensing and control being vested in the Secretary of State.

At present any person can open and conduct a home for inebriates without obtaining a licence and without being subjected to control or inspection. This also is to be altered by the new bill, which requires licences to be obtained for such institutions.

Part II.

Part II of the bill, dealing with the inebriates who are also guilty of offence, is of more interest to the criminologist than to the physician.

In the main the powers enabling judges and magistrates to commit inebriate offenders to reformatories contained in the Act of 1898 are re-enacted in the present bill, with amendment in many details to facilitate procedure. As the law now stands, a so-called criminal inebriate—that is, one who is convicted of an assault or has committed wilful damage, or has neglected a child—cannot be committed to an inebriate reformatory from a court of summary jurisdiction; he must be sent to assizes or sessions, with consequent delay, inconvenience, and expense. The new bill remedies this difficulty by providing that any inebriate convicted of any offence punishable on summary conviction with imprisonment, or of any indictable offence which a court of summary jurisdiction has power to deal with summarily, may be committed to a certified inebriate reformatory without indictment to higher courts.

In the case of an inebriate person convicted of drunken and disorderly conduct, the procedure is also simplified, in order to remove difficulties now met with whenever magistrates endeavour to use the Act. The new bill renders it unnecessary in future to prove four convictions for drunkenness against an inebriate within twelve months, and it also removes the existing necessity for obtaining the consent of the inebriate to be dealt with summarily. To avoid sentences of too long duration being inflicted, before shorter ones have been tried, the new bill limits the power of magistrates to inflict any period longer than six months in the first instance; subsequent sentences being for not less than one, or more than three, years. A new system of rules for persons under probation has also been devised, which may be used by magistrates in lieu of committal to a reformatory or to prison, and all persons released from reformatories after sentence has been served are released on twelve months' probation. This should enable the managers of reformatories to keep in touch with discharged cases, and exercise much more efficient after-care than they have hitherto found possible.

Without going into too minute details, these are the main points regarding persons who may be dealt with as inebriate criminals or offenders.

Certain important alterations have been made in the conditions that govern the establishment of both certified and State inebriate reformatories; these, however, need not be considered in detail for present purposes.

There is one other important matter that requires notice. Hitherto no legislation for inebriates has included persons who become helpless and degraded by the excessive use of narcotic or stimulant drugs, or preparation other than alcohol. Although violence, crimes of passion, and offences generally are less among drug takers than amongst alcoholic inebriates, drug takers frequently bring disgrace upon their families and reduce to poverty all who are dependent upon them for support; they also become

subject to ill health or mental or moral depression, which not infrequently results in suicide. As the law now stands there is no power to deal with such persons either for their own good or for that of the community. This omission has been remedied in the new bill by the definition of "inebriate," which now stands as follows:

> The expression "inebriate" means a person who habitually takes or uses any intoxicants, and while under the influence of such intoxicants, or in consequence of the effects thereof, is at times (*a*) dangerous to himself or dangerous or a cause of terror to others; or (*b*) a cause of serious harm or suffering to members of his family or others; or (*c*) incapable of managing himself or his affairs. The expression "intoxicant" includes any intoxicating liquor, and any sedative, narcotic, or stimulant drug or preparation.

Whatever else the bill may contain it certainly presents a well-thought-out attempt to deal with the private non-criminal inebriate and the inebriate offender by a graduated mode of procedure, beginning with measures of the mildest character, and not increasing their stringency until those milder methods are found to be ineffectual.

LITERARY NOTES.

WE have received from the publisher, Georg Thieme, of Leipzig, the collected writings of Robert Koch, the early publication of which was announced in the JOURNAL of March 16th. The work, which is edited by Professor Schwalbe, with the co-operation of Professors Gaffky and E. Pfuhl, is in two handsome volumes, the second of which is in two parts. They are beautifully printed, and contain 194 illustrations in the text, and 43 tables. A fine portrait of Koch forms the frontispiece to the first volume. A picture of the monument to his memory in the Berlin Institute for Infectious Diseases is the frontispiece of the first part of the second volume. Koch's work as recorded in these collected writings will be a *monumentum ære perennius* to the memory of the great scientist. We congratulate the editors on their zeal and success with which they have discharged this work of piety, and the publisher on the satisfactory manner in which he has presented the result of their labours.

The sixteenth volume of the second series of the *Index-Catalogue of the Surgeon-General's Library, U.S. Army*, issued in Washington in September, 1911, extends from Skinko to Stysanus. The volume includes 9,890 author titles, representing 4,670 volumes and 10,786 pamphlets. It also contains 3,892 subject titles of separate books and pamphlets, and 24,135 titles of articles in periodicals. The library now contains 176,690 bound volumes and 315,494 pamphlets.

The question of clothes is one in which almost every normal human being takes a more or less active interest. It is, of course, a recognized fact that they exercise a very decided influence for good or for evil upon the average mind; and that a man, for instance, who goes about for days unshaven in a suit of pyjamas is hardly likely to be at his best either mentally or physically. Mrs. Scharlieb, whose excellent article on the morals of the young has appeared in the March number of *The Child*, comments upon the bracing effect of neat and suitable clothing upon the character of the growing boy or girl. "Looked at from one point of view," she remarks, "clothes merely serve to defend the body from heat and cold, and to afford that adequate covering demanded by one phase of civilization. Looked at from a slightly different point of view, clean, suitable, and pretty clothes are a real help to morality, whereas dirty, untidy, and ragged clothes, by lowering self-respect, constitute a real hindrance." Another writer in the same number of *The Child*—Miss Alice M. Burn—goes a step further and declares bad clothing to be at the root of the defective physique which is unhappily only too common amongst the children in our elementary schools. "I know of no other condition," she says, "not even excepting bad housing and bad feeding, which, taken alone, is responsible for so much impaired vitality, and consequent low standard of physique. I would carry my statement even further: All other conditions remaining unchanged, rationally clothe a child from infancy and bring it under the influence of physical movements, even such as our elementary schools provide, and better racial results will be obtained than by the correction of any other one deteriorating influence." Almost as serious as the dangers arising from deficient or irrational clothing are the evils arising from eyestrain in school children. The March number of *The Child* contains an interesting article on this important subject, by Dr. David McKail, who strongly recommends the adoption of prophylactic measures in order to check the increase of defective vision amongst children of all classes in this country; whilst Dr. Haldin Davis has contributed a most interesting account of the treatment of ringworm, and Mrs. W. F. Lofthouse gives a charming description of the good work accomplished by the Free Kindergarten amongst the babies in the Salford slums.

We have received a copy of the March number of the *Anti-Suffrage Review*, a magazine published under the auspices of the National League for Opposing Woman Suffrage. It contains a full account of the great anti-suffrage meeting held at the Albert Hall on February 28th. The President of the League is Lord Cromer, and among the members of the Executive Committee are Mrs. Frederick Harrison, Lady Robson, Mrs. Humphry Ward, Lord Curzon of Kedleston, and Lord Northcote.

Dr. Henry Barnes (Carlisle) writes: My inquiry as to the authorship of certain lines published in the JOURNAL of March 9th has elicited an interesting reply from Dr. Percy Rose, and I have also received several replies to the same effect from correspondents in different parts of the country, so that I think the inquiry has excited some amount of interest. In none of the replies, however, are the lines given as I quoted them, and there can, I think, be no doubt that they have been taken from Crabbe's poem, and modified so as to be applicable to a gathering of medical men rather than to books on medicine, which was Crabbe's intention, and the alteration can hardly be regarded as an improvement. In the last line the subjunctive "But" has been substituted for "and," and the word "lingering" for "stormy." I have to-day looked up an edition of *Crabbe's Poetical Works*, edited by his son and published in 1834, and I find an interesting footnote referring to the last line which bears upon our rule of conduct in smoothing "the stormy passage to the grave." The note is as follows:

> Sir Henry Halford, in his "Essay on the Influence of Disease on the Mind," has the following striking passages on the conduct proper to be observed by the physician in withholding, or making his patient acquainted with, his opinion of the probable issue of a malady manifesting mortal symptoms. "I own, I think it my first duty to protract his life by all practicable means, and to interpose myself between him and everything which may possibly aggravate his danger. And unless I shall have found him averse from doing what was necessary in aid of my remedies, from a want of a proper sense of his perilous situation, I forbear to step out of the bounds of my province, in order to offer any advice which is not necessary to promote his cure. At the same time, I think it indispensable to let his friends know the danger of his case the instant I discover it. An arrangement of his worldly affairs, in which the comfort or unhappiness of those who are to come after him is involved, may be necessary; and a suggestion of his danger, by which the accomplishment of this object is to be obtained, naturally induces a contemplation of his more important spiritual concerns. If friends can do their good offices at a proper time, and under the suggestions of the physician, it is far better that they should undertake them, than the medical adviser. But friends may be absent, and nobody near the patient, in his extremity, of sufficient influence or pretension to inform him of his dangerous condition; and surely it is lamentable to think that any human being should leave the world unprepared to meet his Creator. Rather than so, I have departed from my strict professional duty, done that which I would have done by myself, and apprised my patient of the great change he was about to undergo. . . . Lord Bacon encourages physicians to make it a part of their art to smooth the bed of death, and to render the departure from life easy, placid, and gentle. This doctrine, so accordant with the best principles of our nature, commended not only by the wisdom of this consummate philosopher, but also by the experience of one of the most judicious and conscientious physicians of modern times—the late Dr. Heberden—was practised with such happy success in the case of our late lamented sovereign (George the Fourth) that at the close of his painful disease 'non tam mori videretur (as was said of a Roman Emperor) quam dulci et alto sopore excipi.'"

Writing in *Nature* of February 15th, Mr. H. S. Rowell states that Thomas Young, more particularly famous as the founder of the wave theory of light, matriculated at Göttingen on October 29th, 1795, and took the doctor's degree there in medicine on April 30th, 1796. This fact, says our contemporary, is little known, even among Young's admirers. Indeed, it had escaped the knowledge of the Göttingen authorities. With the view of perpetuating Young's memory in Göttingen, Mr. Rowell brought the matter before the notice of Dr. E. Riecke,

Professor of Experimental Physics at Göttingen. Professor Riecke placed the matter in the hands of the Pro-Rector, Geh. Rat Professor Dr. W. Voigt, who instituted inquiries as to the place of Young's abode. It was discovered that Young had lived in the building which later became the Physikalisches Institut, and is now the Institüt für angewandte Mechanik und Mathematik. It is a pleasing coincidence that in this same building Gauss and Weber did their work on the first electro-magnetic telegraph. Shortly before Christmas, as a result of Professor Voigt's representations to the magistrate of the town, a neat little tablet to the memory of Thomas Young was affixed. This tablet is in appropriate proximity to that in memory of Gauss and Weber. It may be added that there is a tablet on 48, Welbeck Street, W., commemorating Young's residence in that house.

SCIENCE NOTES.

NOTES were published recently on the results of historical researches by Mr. W. Sedgwick and Sir John Moore tending to controvert the opinion often heard in conversation that the climate of the British Isles has changed in recent historical times. A lecture delivered by Professor Otto Pettersson, Director of the Hydrographical Station at Bornoe, Sweden, at a recent meeting of the Royal Meteorological Society, while not disproving the contention that the British climate is much the same in its variability, as it was four or five hundred years ago, contained some evidence that the climate of the Baltic countries had changed its character in some respects during the last six or seven hundred years. Professor Pettersson began his lecture, which was on the connexion between hydrographical and meteorological phenomena, by maintaining that the mediaeval age was characterized by frequent violent climatic changes, which seem to have culminated in the thirteenth and fourteenth centuries, when hot summers, accompanied by droughts, which nearly dried up the rivers of Europe, alternated with cold summers and excessive rainfall. In some winters violent storm floods occurred which entirely remoulded the coasts of the North Sea, while in others the frost was so severely that the entire Baltic and sometimes even the Kattegat and the Skagerak were frozen. He considered that such phenomena must be ascribed to alterations in the oceanic circulation caused by the influence of the moon and the sun. Experiments carried on during the last four years at Bornoe had shown that the inflow of the undercurrent from the North Sea into the Kattegat, which brings the herring shoals in winter to the Swedish coast, was oscillatory, the boundary surface of the deep water rising and sinking from 50 ft. to 80 ft. about twice a month. The phenomena was governed by the moon's declination and proximity to the earth. From astronomical data Professor Pettersson concluded that the influence both of the sun and of the moon upon the waters or the ocean in winter about the time of the solstice must have been greater 600 to 700 years ago than at the present time, and that this caused a more intense circulation; evidence of this was afforded by the fact that the migrations of the herring—which now only reaches as far as to the Kattegat—in those centuries extended into the Baltic. The bank water or deep water of the Kattegat in winter time must then have attained a higher level, and entered the Baltic through Oresund. The surface layer must have been thinner; and as a thin surface layer was much more easily cooled in winter and heated in summer than a thicker one, the controlling temperature influences of the ocean must have been different at least in northern and north-eastern Europe. In mediaeval time the climate of these regions must have had, on the whole, a more continental character than now. In conclusion he showed that the hypothesis first proposed by A. W. Ljungman in 1879, that the periodicity of the great secular herring fishery of Bohusland should agree with that of the sunspots, was not incompatible with the phenomena he had described, since the fourteenth century was noted in Chinese annals as an epoch of maximum solar activity, and since the sunspot frequency curve of Wolfer could be reconstructed by harmonic analysis, using the moon's apside and nodal period as the basis of the analysis.

We had occasion a few weeks ago to notice the publication of a short book on *Ancient Types of Men*, by Professor Keith, the accomplished curator of the Museum of the Royal College of Surgeons in England. We have now to welcome another small volume, *Prehistoric Man*,[1] by Dr. W. L. H. Duckworth, University Lecturer in Physical Anthropology, Cambridge. The two books deal with the same subject, but in different ways. Professor Keith begins with the less remote, neolithic man, and works backward to the most remote man, or ancestor of man, the ape-like man of Java; Dr. Duckworth reverses the order. Professor Keith's book is the better written, the easier to read, the work of a practised expositor; Dr. Duckworth's is the more technical, more detailed, and so judicial and free from dogmatism as to be a little likely to confuse the newcomer to the subject. Both books should be read, but in the order of their publication. Professor Keith's rapid comprehensive summary could hardly be surpassed as an introduction to the subject; as Herbert Spencer wrote in his *Principles:* "A preliminary conception, indefinite but comprehensive, is always useful as an introduction to a complex conception—cannot, indeed, be dispensed with." Not that Professor Keith's book is indefinite, but it gives the preliminary comprehensive conception Spencer had in mind. To say of a book that it leaves the reader nothing to unlearn is often not praise but the most damning criticism. Lacking the preliminary comprehensive conception, the mind is confused and the critical faculty cannot operate. Dr. Duckworth has allowed himself to be embarrassed by his intimate personal study of the subject and his wide acquaintance with its extensive literature, its numerous and even bitter controversies. On the other hand, the subject is so new, the facts so few, so difficult of interpretation, and so liable to various interpretations, that his suspension of judgement is undoubtedly fully justified. He counsels an atttiude of suspense even as to Klaatsch's "diphyletic" theory of human descent, a theory that Professor Keith almost scornfully rejects—the theory of a double evolutionary origin of modern man from an ancestor common to the orang-utan (Asiatic anthropoid) and from an ancestor common to the gorilla (African). Dr. Duckworth finds some justification for it in the theory of the diphyletic origin of the horse and swine. He concludes that "the diphyletic scheme may yet be modified to such an extent as to receive support denied to it in its present form." Again, in the concluding section of his book, Dr. Duckworth, after enumerating the various views as to the descent of man which he had stated more fully in the preceding pages, says:

> The impossibility of summing up in favour of one comprehensive scheme will be acknowledged. More research is needed; the flatness of a cranial arc is but one of the many characters awaiting research. . . . Till comparatively lately the erect attitude was supposed to have been acquired less recently in human evolution than the characteristically large brain. Then that opinion was exchanged for wonder at the disproportionately large amount of space provided for the brain in the man of Neanderthal. The tableau is changed again, and we think less of the Neanderthal type and of its lowly position (in evolutionary history). Our thoughts are turned to a much more extended period to be allotted to the evolution of the higher types. Adaption to climatic influences, the possibilities of degeneracy, of varying degrees of physiological activity, of successful (though at first aberrant) mutations, all demand attention in the present state of knowledge.

These quotations are a fair sample of Dr. Duckworth's method, of its strength and its weakness. His book is inspired throughout by a true scientific spirit and should be studied carefully.

MOTOR CARS FOR MEDICAL MEN.

MOTOR-CAR BODIES.

DR. J. R. JOHNSON (Richmond Hill) writes: What is the experience of medical men using "double-purpose" bodies on their cars?

1. Are they a success?
2. What horse-power chassis is it advisable to use with them?
3. Do the double-purpose bodies rattle?
4. Who are the best makers and what ought to be a fair price to pay for a double-purpose body?
5. What width of seating is it advisable to employ?

In some models I have inspected very insufficient room is provided, and although advertised as being constructed so that entrance can be made on either side, entrance on the driving side was practically impossible.

[1] *Prehistoric Man.* By W. L. H. Duckworth, M.A., M.D., Sc.D., University Lecturer in Physical Anthropology, Cambridge. (Cr. 8vo, Figs. 28, pp. 161. 1s. net). Cambridge: At the University Press. 1912.

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THE INSURANCE DEFENCE FUND.

THE answer of the Chairman of the Joint Committee of Insurance Commissioners to the questions put to him in the House of Commons last week by Sir Philip Magnus may be interpreted to mean that he hopes that the Insurance Commissioners may find it possible to meet the demands of the medical profession by regulations to be made under the Act. The British Medical Association so far shares this hope that it has nominated members to serve on the Joint Advisory Committee to be appointed by the Insurance Commissioners, on the distinct understanding, of course, that the members are pledged to vacate their seats should the British Medical Association determine to cease negotiations with reference to the National Insurance Act. There appears, therefore, to be a desire for a truce, but it must not be a one-sided arrangement, and the body calling itself the Liberal Insurance Committee may fairly be invited to restrain its lecturers from making provocative speeches against the medical profession in the course of their mission to explain the advantages of the insurance scheme to audiences up and down the country.

To many it will seem that, with the best will in the world, an early favourable solution by way of the discussions which are now to take place will present great difficulties, even should the Treasury assume a more sympathetic attitude than it displayed when it gave its now historic instructions to the Government actuaries last May. For some of those who hold this view an amending Act is a possible means of meeting the situation; but even assuming—a large assumption—a readiness on the part of the Government to introduce and pass an amending Act, the present state of parliamentary business will not encourage them to proceed. The profession has the advantage this week (SUPPLEMENT, page 353) of reading the address delivered by the Chairman of Representative Meetings before the Sunderland Division on March 22nd. Dr. Maclean took occasion to review the present situation and to discuss the advice which, apart from the question of pending negotiations, the newly-appointed State Sickness Insurance Committee tenders to the Association and to the profession.

It is clear that the profession may have before long to face a situation brought about by the failure of the Insurance Commissioners to meet its demands. In that case the Commissioners would have the choice of several possible courses, but practically they seem to reduce themselves to two—a whole-time medical service, or the suspension of medical benefit, the pecuniary equivalent being handed over to the insured person. Without entering into the merits of this question and judging from the utterances of Ministers alone, it seems clear that they recognize that the first alternative would present difficulties practically insurmountable, and that it is the latter which is favoured as a last resort. It would be a confession of failure, but it might be selected as the line of least resistance. If it were taken the Insurance Commissioners would doubtless throw the whole weight of their influence on the side of the friendly societies, which would be left free, with increased numbers and larger funds, to endeavour to impose on the profession conditions as hard and far more wide-reaching than even before.

This result the profession is determined, whatever happens, shall not be brought about; but to succeed in the struggle that would ensue it will be absolutely necessary that the profession shall be prepared with an adequate defence fund, and with an alternative scheme for providing medical attendance and treatment for the classes which cannot be expected to make adequate provision except on a provident basis. Such a scheme was drafted some years ago and very fully discussed by some of the Divisions, many valuable suggestions being made. The details were carefully worked out, and the scheme with the safeguards it contained was approved by the Association.

Dr. Maclean was able to state that the State Sickness Insurance Committee of the British Medical Association would, at the earliest possible moment, send to the Divisions a scheme for setting up a Public Medical Service adapted to the conditions which would arise should the negotiations now to be begun finally break down. He said that to a large extent success or failure would be determined by the attitude of the present holders of club appointments and of the honorary staffs of voluntary hospitals, and that the same loyal support was expected from both. But he also pointed out that the Association had no right to ask club doctors to bear their share in the fight, which would be the brunt of the battle, unless it was prepared through its Insurance Defence Fund to give pecuniary support to men who suffered pecuniary loss through their loyalty to the principles enunciated by the Association.

In the circular recently issued by the State Sickness Insurance Committee to the Honorary Secretaries of Divisions with regard to the formation of provisional Medical Committees, it was pointed out that the local canvass it recommends should include an application to all practitioners to guarantee as much as they can afford to the Insurance Defence Fund. It would appear to be preferable that guarantees should be given to the Central Insurance Defence Fund through the local committee. A large central fund is necessary, so that the Association shall be in a position to support local effort and supplement local funds in those districts where the need may prove to be greatest. Further, whilst subscriptions to local funds are very desirable, there is another reason why the profession should contribute to the central fund; it is that the central expenses have been and still are very large. Included in the expenditure that must be met from the central fund are the employment of extra staff for the formation of a register of the profession, for the issue of circulars both to the profession and to Parliament, and for the administration of the fund itself. There is, in addition, the payment of expenses in connexion with the numerous and very frequent meetings of the committees and the organization of deputations. Altogether the Association has already spent more than £8,000 in this way over and above its normal expenditure. The State Sickness Insurance Committee is able to give to all who contribute to the Defence Fund the absolute assurance

that they may do so with the utmost confidence that it can and will be administered under the auspices of the Association for the purpose for which it is intended. This is an occasion for determination and, if necessary, personal sacrifices. Generous support of the Defence Fund is one of the ways in which the more fortunate members of the profession may show their sympathy and solidarity with the whole profession. But it is an occasion for every man to do what he can, and we have recently seen an offer from a country practitioner residing in a district of England where they are more disposed to boast of their wisdom than of their wealth to make himself responsible for £100. If this spirit is shown by others whose opportunities are greater, the fund at the disposal of the Association would in a few weeks be so large that the apprehension naturally felt by the holders of some club appointments would be set at rest.

THE FISH SUPPLY OF GREAT BRITAIN.

LAST week Professor D'Arcy W. Thompson gave an evening address at the Royal Institution on the history of the North Sea fisheries. As a lecturer Professor Thompson is at once dramatic and impressive, and is careful not to let statistics and technical details, which in the case of fisheries are apt to be unwieldy, obtrude themselves too much, and so obscure the main theme. The subject at first sight appears too formidable for an hour's treatment, but by a skilful manipulation of lantern slides the lecturer was able to bridge over many of the gaps which otherwise would have required lengthy exposition.

In a brief summary of early times Professor Thompson mentioned the debt which the fisheries of this country owe to the Dutch and Frisian fishermen of the eighteenth century, and instanced the fact that not a few of the implements still in use amongst our fisher people are exact replicas of those used by the Dutch two hundred years ago. The North Sea, its physical peculiarities and their relation to the fishing grounds, were strikingly illustrated. The gradual shelving of the bed of the sea from the north to the south, forming in its southern part a great plateau which extends across from Britain to the Continent, was clearly shown in a series of charts. It is on this great southern plateau that the bulk of the fishing is prosecuted. The rich Dogger Bank forms an elevation projecting from this plateau.

In reviewing the nature of the fishing and the catch, Professor Thompson sketched the various methods in vogue at the present day—the line fishing, the drift net, the various trawls, etc. The remarkable change from small private fishing boats to large steam trawlers was shown by appropriate illustrations. This rapid change has introduced a serious administrative problem—namely, the safeguarding of the interests of the fishing populace, which still relies on small private enterprise. It was partly on their account that the statute was enacted which forbids trawling operations within a distance of three miles from the coast, a statute, however, which has the further aim of preventing the destruction by the trawl of certain small immature fish which frequent the inshore waters.

With regard to the nature of the catch, it is remarkable how greatly our food fishes differ from those of the markets of Southern Europe. In the North Sea our staple fare consists of the cod, haddock, plaice, dab, halibut, and herring, members of the cod, flounder, and herring families. In the Mediterranean these are replaced by members of the spiny-finned tribe, the mackerel, mullet, bream, and a host of others. Professor Thompson was speaking exclusively of the North Sea fisheries, for on the South Coast, and even on the West, we are familiar with quite a number of the spiny-finned food fishes (*Acanthopterygii*). It must not be forgotten, although this point was not emphasized by the lecturer, that the fishes of the North Sea differ considerably from those of the West and South Coasts. Thus, in the former, the mackerel, horse mackerel, sea bream, John Dory, and pilchard, although they are met with, are not common, and are rarely marketed; whereas, on the South Coast, they form a considerable part of the market. On the other hand, the haddock, which is *par excellence* the staple commodity of the eastern Scottish fish markets, is rarely found on the southern and western coasts. Here its place is taken by the whiting, and to some extent by young saithe and lythe or pollack. Another feature which the lecturer did not enlarge upon was the enhanced value of the skate fisheries. Twenty or thirty years ago or more the nimble sixpence would have purchased a large skate; now it is sold at almost as much per pound. There are other instances, too, of the enhanced value placed upon certain fishes. Half a century ago large catches of turbot and other valuable fishes could only be disposed of as manure. To-day increased railway facilities have opened up a very wide market for such fishes, and in consequence their intrinsic value has increased enormously. The whole aspect of affairs has, in fact, as Professor Thompson remarked, been changed by the advent of steam trawling and improved railway service. Some idea of the enormous extent and commercial value of the fisheries was given in figures and diagrams. It has been a common cry that unrestricted fishing will eventually depopulate the North Sea. Judging by statistics, however, in most cases there is no sign of such an event, and in this respect Professor Thompson's views coincide with those of his illustrious predecessor on the Fishery Board, Professor McIntosh of St. Andrews, whose dictum, familiar to most fishery experts, "There is nothing that man can do which will depopulate the sea of its fishes," remains unshaken in the majority of cases. There is one serious exception, however, namely, the flat fishes (*Pleuronectidae*). From Professor Thompson's figures it is obvious that, although there are annual variations of considerable extent in the case of most fishes, there is a steady increase in the number of fish marketed. Yet flat fishes, plaice and soles especially, show a distinct and continued falling off, and it would appear as if some legislative measures might be necessary to maintain the supply of such fishes. The more circumscribed habits of the flat fishes in general, and especially in breeding, expose them to greater dangers than their more nomadic brethren the Gadoids.

These are the main facts concerning the North Sea fisheries, and it would be wearisome to discuss here in detail the large mass of statistics on these points accumulated by the Fishery Board during the course of the last thirty years. The fisheries not only of the North Sea, but also of other parts of our coasts, represent an asset of great national importance, and the cordial reception which was accorded Professor Thompson's address is evidence that the matter receives a fair share of public interest and attention.

DOMINION REGISTRATION IN CANADA.

THE Legislature of Quebec has passed the "enabling clauses," giving effect to the Canada Medical Act so far as the Province of Quebec is concerned. The necessary legislation passed the British Columbia Legislature in the present session. Eight of the nine provinces have now passed the necessary legislation. The only province which has not taken action is Ontario, but the Ontario Medical Council is also in favour of similar action through its Legislature, and is now seeking to have a bill passed at the session which has just opened. The draft of an Act has been submitted by the Ontario Medical Council to the Attorney-General, which will in due course be placed before the Council, and if approved will be embodied in a bill. In that case its passage would follow automatically.

If Ontario takes the expected action, a meeting of representatives of all the medical councils of the Dominion will be convened at Ottawa during the coming summer or autumn, when the Dominion Medical Council, authorized by the Canada Medical Act, will be formed. As it is confidently expected that Ontario will be in line with the other provinces of the Dominion before the summer, there will then be no obstacle in the way of giving effect to what has long been known among the medical profession of Canada as the "Roddick Bill."

This bill, aiming at the establishment of one set of examinations and one standard of qualifications for the practice of medicine in Canada, in place of the different examinations and varying standards of the individual provinces, was introduced in the Canadian House of Commons in 1902 by Dr. Roddick, then representing St. Antoine Division, Montreal. The bill was passed, but owing to objections raised to certain features by provinces jealous as to their existing rights, it was found impossible to give effect to the Act.

In his address as President of the British Medical Association at its Annual Meeting in Montreal in 1897, Dr. Roddick touched on this subject, and explained that when the British American provinces became federated in 1867, under the British North America Act, the governance of educational matters was taken away from the Federal authorities and handed over to the provinces, each to look after them in its own way. "In consequence we have since," he said, "had a curious complexity of medical legislation, there being practically no uniformity amongst the provinces in regard to standard of study or qualification for practice. Each province has its own medical board or medical council, as the case may be, which has the power to grant licence to practise either after examination or on simply presenting the diploma of certain recognized universities." In this way a Chinese wall had, he said, been built round each province, and the frontier was carefully guarded, so that it was unsafe for a medical man to pass from one to the other unarmed with a licence, because of the risk of fine or even imprisonment. Two remedies, he said, had been suggested: Either the establishment of an examining board in each province with a uniform standard of matriculation and curriculum; or, secondly, a Dominion governing board. It is the second recommendation which has been adopted.

About two years ago a meeting of representatives of the provincial medical councils was held in Montreal, when Dr. Roddick succeeded in securing the consent of all to certain amendments which he proposed to the original Act. These amendments, removing earlier objections, were embodied in a bill which was passed during the session of the Dominion Parliament in Ottawa in 1911. It is part of the Act as it now stands that the provinces give their assent to the principle of the Act through a bill passed in their own Legislatures, and it is this step which has now been taken by all the provinces save one.

When the Dominion Medical Council is finally formed, it will be possible for a medical practitioner, having passed the examinations prescribed by it, to practise in any province of Canada, instead of, as at present, only in the province or provinces in which he has satisfied the requirements of the respective provincial medical councils. The Dominion Medical Council will have full authority over the purely professional subjects, while the provinces will probably exercise authority over the non-professional subjects of the examinations.

Dr. Roddick has occupied himself for fifteen years or more in promoting this reform, and it must now be a matter of great satisfaction to him that his unremitting labours on behalf of the profession are crowned with success. So soon as all the provinces have consented, he will feel that his work in this direction is at an end, since it is the Minister of Agriculture who, according to the terms of the Act, will supervise its operation.

DISPENSING.

IN a letter on dispensing, which is published in the SUPPLEMENT of this week, from Mr. Tocher, ex-president of the British Pharmaceutical Conference, it is pointed out that the reference to the Pharmaceutical Society in the minute of the Special Representative Meeting is open to some criticism, on the ground that the society has no more power to impose its will on pharmacists with respect to tariff rates for medicines than the General Medical Council has to impose its will on medical practitioners with respect to medical fees, and it is quite possible, as Mr. Tocher suggests, that neither the Pharmaceutical Society nor its Council will even desire to suggest a tariff for pharmacists. A more suitable body for suggesting a tariff might be the British Pharmaceutical Conference, which ought, perhaps, to have been the body mentioned in the minute of the Representative Meeting rather than the Pharmaceutical Society. There is, however, no question of any power to impose a tariff on pharmacists. Neither the Pharmaceutical Society nor the Pharmaceutical Conference, nor any other body can do more than suggest, and use a certain amount of influence to persuade, pharmacists to require the institution of any particular tariff, just as the British Medical Association can only suggest and use its influence with medical practitioners about medical fees. Mr. Tocher quite correctly states that, technically and legally, the final decision as to tariffs is a matter for arrangement between pharmacists on the lists and the Commissioners, just as the final decision as to medical fees will, in the same sense, rest with the doctors who are willing to go on the panels. In actual practice, however, the local Medical Committees, acting in agreement with the Representative Meeting, will, no doubt, endeavour to apply certain principles in a uniform way throughout the country. In the same way the Representative Meeting considered it likely that some representative body of pharmacists would be certain to endeavour to obtain uniformity in the scale of charges to be made by local pharmacists for medicines, and it matters little whether that body be the Pharmaceutical Society or the Conference or any other organized body of pharmacists. It may be that pharmacists are not so fully and completely organized under any representative body as the medical profession is under the British Medical Association; but the Representative Meeting, while claiming the right of medical practitioners to continue dispensing as at present, wished to make it plain that they would not be

guilty of underselling the pharmacists, but would be willing to adopt the same scale of charges as pharmacists generally consider reasonable for medicines supplied to the insured. Some misconception seems to have prevailed as to the attitude of the British Medical Association on the question of dispensing by medical men. At the Special Representative Meeting held last May it was resolved "that in any insurance service the provision for the supply of material requirements should be kept separate from that for the provision of medical services." This resolution had previously been submitted to the Divisions, and 117 voted for it, while only 10 voted for the suggestion that material requirements (medicines, dressings, etc.) should be provided by the medical practitioner under the same inclusive fee or rate as professional services. This resolution of the Representative Meeting has frequently been wrongly interpreted as meaning that the profession was willing and desirous to give up dispensing; though that may be true in certain districts, it is not true as regards the great bulk of general practitioners. The objection of the Representative Meeting was not to dispensing, but to supplying material requirements at the same inclusive fee as professional services. There is a far too common impression among the working classes that what they pay when they visit a doctor is simply for the medicines they receive. The suggestion, too, has been made that club doctors receiving an inclusive fee for attendance and medicines are under some temptation to use cheap drugs in order to keep down their expenses; it may be true that the club rates would not cover any extensive use of the more expensive remedies, but it is the experience of most club doctors that cheap drugs are often of little value, and fail in the long run to shorten illness, a failure not only contrary to the guiding principle of the medical profession in all countries and ages, but calculated to increase the work of the doctor. It was to meet these points that the resolution of the Representative Meeting of last May was passed. The intention was by no means the same as Mr. Lloyd George's idea of a complete "separation of the drugs and the doctors." That has never been advocated by the Representative Meeting. It happens too often that any prescription given to patients is used time after time when it is perhaps out of place, and is often handed round to neighbours and friends and used for all sorts of diseases which may really need very different remedies; and it is as much in the interests of the public as of the profession that the Special Representative Meeting passed the resolution quoted by Mr. Tocher. The argument that the insured should have free choice of pharmacist, in the same way as they have free choice of doctor, may be accepted when there is need for them to go to any pharmacist; but if a patient does not trust his medical attendant to give him proper medicines, he should choose another doctor. Many, if not most, of the insured, we are convinced, will prefer to obtain their medicines direct from the doctor himself, not merely on the ground of the saving of trouble in having to go to both doctor and pharmacist, but because they have greater confidence that they are getting exactly what the doctor wants them to have. The profession has no desire to interfere with any established right of pharmacists, but it will strongly resent any attempt by pharmacists to usurp what is the undoubted right of medical men to dispense their own medicines, when they think proper, for their own patients.

INTRA-VITAM STAINING.

THE publication of Ehrlich's results with salvarsan has been followed during the last few months by numerous papers from Continental laboratories dealing with the effects of various chemical substances on malignant growths and certain other diseases. Last January we had occasion to consider at some length Wassermann's experimental injections of a compound of eosin and selenium, and to discuss the significance of the suggestive results achieved. Last week a brief report was published of a paper communicated to the Royal Society, by Professor Goldmann of Freiburg, on a method of examining normal and diseased tissues by means of *intra-vitam* staining. This method, at which he has been working for a considerable number of years, is sufficiently interesting to make it worth while to add some particulars to the rather bald statement in the report. Professor Goldmann injects, either subcutaneously or intravascularly, such dyes as trypan-blue, benzopurpurin B, diamin-blue BB, diamin-black BH, vital Neu Rot, vital Neu Orange, vital Neu Gelb, and Dianil Blau R. It appears that cell plasma which attracts fat and lipoid stains also shows a marked tendency to vital stains; but it is to be noted that the pyrrhol cells—cells thus named from their property of absorbing the so-called vital stains—are only stained so long as they are unimpaired, whereas during their transformation or disintegration their power of attracting the fat stains increases. Professor Goldmann appears to have established that by means of the stain it is possible to distinguish the reticulum cell of lymph glands, spleen and bone marrow, the interstitial cell of the testicle, the follicular cell in the maturing Graafian follicle, the cortex cell of the suprarenal, the epithelial cells of the choroid plexus, and the epithelial lining of the convoluted tubes of the kidney. The behaviour of the placenta to the stain is remarkable. When pregnancy occurs in the stained animal the colour leaves the skin and is concentrated in the uterus. In the early stages, when as in the rat and mouse development is slow, and dependent only upon exuded maternal blood, peritoneal pyrrhol cells migrate into the uterine wall, penetrate the primitive placenta, and cast off vitally-stained granules which are taken up by the fetal cells. Once the placenta has attained maturity the stain appears in the giant cells, in the fetal cells constituting the barrier between the maternal blood spaces and the endothelial lined capillaries of the fetus and in the yolk membrane. The embryo, however, remains colourless. The same fetal cells that absorb the vital stain also store glycogen, fat, and haemoglobin before they pass into the fetal circulation. In wounds produced in the skin, liver, and kidney, the pyrrhol cells appear after the initial emigration of leucocytes. Phagocytosis of the leucocytes takes place by the pyrrhol cells, which stretch into and become the spindle cells of young connective tissue. The activity of the pyrrhol cell is prominently displayed in the surrounding of parasites, such as the trichina and other worms. Professor Goldmann has found it possible also to demonstrate the fundamental difference in the distribution of the avian and bovine bacilli of tuberculosis when introduced into the peritoneal cavity of the mouse; bovine bacilli, he says, pass to the lung along the blood stream through the thrombosed portal veins, whereas in the avian variety the dissemination is effected by the lymphatics. In non-inflammatory necrosis of the liver—as produced, for instance, by icterogen, an arsenic compound of the series which includes salvarsan—vitally stained pyrrhol cells migrate from the peritoneal cavity along the liver lymphatics, and assist in the repair of damage. Professor Goldmann demonstrated specimens of malignant growths, showing that the pyrrhol cells collect in large numbers around the growing tumour, and penetrate it along the blood channels of its lobules. In the interior of the tumour most of the cells succumb. Professor Goldmann regards their appearance as a specific local reaction induced by the tumour cell, and contends that it is the pyrrhol cell alone that is so attracted in the absence of inflammatory agents. Experiments on mouse tumours by means of agents which damage the liver show that the cells absorb the degeneration products. The

tumour evidently suffers through the application of these substances, and Professor Goldmann concludes "it does not seem improbable that the pyrrhol cell is also active in transporting substances to the tumour, which impede, and in many cases stop its growth."

VOICES OF THE DEAF.

THE current issue of the *Albion Magazine*[1] which is published in the interests of the deaf, contains some interesting observations by Dr. Norman Porritt on the vocalization of people who are more or less markedly deaf. As a deaf person is above all things sensitive and afraid to draw attention either to himself or his failing, he gets into the habit of modulating his voice, and unconsciously adopts a too subdued tone in speaking. This is a danger against which many deaf persons are not sufficiently alert, and if a deaf person is not watchful he may practically lose his voice as well as his hearing. Even with the help of the best medical treatment he may not be able to retain the latter, but he ought at least to be able to preserve the former. To this end he should avoid the enticing habit of speaking in his throat, and should be at pains not only to articulate clearly, but to open his mouth and enunciate his words distinctly and even emphatically. He should not be afraid of speaking out. As a useful exercise for the deaf in this respect, reading aloud so as to be heard distinctly in a large room by people of normal hearing is recommended. This advice is worth noting by those who have to deal with deaf people either as friends or as medical advisers, for it must be a matter of common observation that it is as difficult to understand some deaf people as it is to make them hear. The fact is that all human beings tend to attune their voices by the amount of sound in their vicinity, and in the absence of any external sound gauge the desirable pitch by the sound of their own voices. In the case of deaf people all external vibrations produce more or less muffled sounds, while since those of their own voices reach their hearing organs practically unimpaired they cause a relatively great noise. The result is that the deaf man is handicapped in gauging the tone of his voice, and tends to think that he is speaking much more loudly than is really the case. Hence he often gives his friends and others who have to converse with him an unnecessary amount of trouble by making it difficult to hear what he has to say as well as to make him hear. Similarly the deaf man sometimes puts himself at an unnecessary disadvantage by commencing a conversation with a stranger in what is really a very low tone, and thus inducing his auditor to drop his voice likewise.

LISTER'S ABLUTIONS.

WE know that there are superior persons who think that washing is a superstition, and that an unbroken covering of dirt on the skin is as a coat of mail against invasion by microbes. They may perhaps quote the testimony of Sir Ernest Shackleton, who says that though he and his companions were unable to wash for several months, they suffered no ill effects from this enforced abstinence from the lustrations generally deemed necessary by civilized man. But then they were in good condition, and apparently lived in an atmosphere free from microbes, inasmuch as they remained free from colds, influenza, and other affections often attributed to a low temperature, till they returned to regions where micro-organisms flourish. We know that Walker, the eccentric author of the *Original*, held that a healthy skin is sufficient by its own action to protect itself against dirt. He has had few followers, however, except among the great unwashed, who as a class are the chief distributing agency of infectious disease. It is surely a curious irony of fate that the man who devoted his life to the extermination of harmful microbes, and who was the inventor of the most elaborate ritual of physical purity, should be claimed as an apostle of the gospel of dirt. The *Scotsman* has printed a silly story in which Lord Lister is made to say that he never bathed, never washed, and had not used water for years; he only rubbed himself with dry towels. We can only regard this as a mystification. It is well known how quickly an accretion of legends grows around great names, and Sir Hector Cameron did right in destroying this particular one before it had time to become hardened into the incrustation of lies which forms so large a part of what passes for history. As an intimate friend of Lord Lister for the last fifty years who knew his personal habits well, Sir Hector asserts emphatically that the story is most absurd, baseless, and untrue. He goes on to give what is probably the origin of the legend: "I remember once hearing him, in the course of a lecture to a students' medical society, state that he disapproved of surgeons performing prolonged ablutions of their own hands and of the skin of the part of the patient's body to be operated on, before applying a watery solution of carbolic acid to both. He objected to the natural grease of the skin being removed first by the soap and water, because he knew that carbolic acid has a very strong chemical affinity for oils and grease of every kind, and only a weak one for water. He therefore held that if the skin of the patient and of the surgeon's hands be treated with a watery solution of carbolic acid without previous washing, the penetrative power of the acid was much greater, since it tended to part from the water, which held it weakly, and flew to the somewhat greasy skin, with which it had a stronger affinity. He then said 'I, therefore, never wash my hands—' but the rest of the sentence was drowned by the laughter and applause of the students. When these were finished, he also finished his sentence—'I, therefore, never wash my hands immediately before operation, but trust entirely to soaking them for a little in a saturated solution of carbolic acid.'" The growth of legends is always interesting, but we may be grateful to Sir Hector Cameron on other grounds for having so effectively cleared the memory of an illustrous man from a foolish misunderstanding which might easily have become fossilized into an injurious tradition.

ANDRE LEVRET.

A CORRESPONDENT has asked for a sketch of the career of Levret, the famous French obstetrician of the eighteenth century. Like many men who have helped to further the progress of the healing art, the best record of his life is in his works. André Levret was born in Paris in 1703, and, having become initiated into the art and mystery of surgery, soon acquired considerable reputation. He had the good luck to win the confidence of Samuel Bernard, a wealthy man, who attached him to his person, and on his death left him a sum of £4,000, in addition to an annuity. This allowed Levret to follow his bent without the hindrance of money troubles. He devoted himself to obstetrics, in which he gained such a reputation that pupils came to him from all parts of Europe. Among his patients were the most distinguished ladies of Paris society, and he was accoucheur to the Dauphiness, mother of Louis XVI. Levret is said to have been the first to direct attention to the implantation of the placenta at the internal os and to explain the haemorrhage due to that condition. He demonstrated the causes which favour or hinder the delivery of the placenta and the procedures to be employed in such circumstances. He was a great inventor of instruments, among them being a forceps for the removal of the ovum or the placenta in cases of abortion in the early months. He did not confine himself to midwifery, but was a surgeon of sufficient eminence to be elected a member of the Royal Academy of Surgery of Paris. He invented scissors with concave

[1] The *Albion Magazine*. Edited by Evan Yellon. No. 15 vol. iv. January-March, 1912. Page 54.

cutting edges for the excision of the uvula; devised a procedure for the removal of polypi of the nasal fossae and of the uterus by ligature instead of by evulsion; cured hydrocele by the use of irritating injections. He presented to the Academy of Surgery memoirs on these subjects and on hernia of the bladder. In addition to these contributions to medical literature he was the author of a work on the causes and accidents of many difficult labours, first published in 1747, which ran to a fourth edition published in 1770. To this last edition was joined a small supplementary essay which had already appeared in 1751. This was a reply to criticisms on his first work which appeared in the *Journal des Savants* in 1749. Other works are: Observations on the Radical Cure of Several Polypi of the Womb, of the Throat and Nose, by New Methods (Paris, 1749); Explanation of Several Figures on the Mechanism of Pregnancy and Delivery (Paris, 1752)—the figures show the different degrees of dilatation of the womb; the Art of Midwifery Demonstrated by Physical and Mechanical Principles (Paris, 1753, 1761, 1766)—this remained a textbook for a long time, and was translated into various languages; An Essay on the Abuse of General Rules and against the Prejudices which stand in the way of Progress in the Art of Midwifery (Paris, 1766); a Treatise on Difficult Labours (Paris, 1770), in which the application of the forceps, its shape, etc., are fully discussed; Observations on the Suckling of Infants (Paris, 1781), a German translation of which was published at Leipzig in 1785. Levret seems to have been a man of sturdy independence of character, for it is recorded that when he was called to Court to attend the Dauphiness, the Dauphin said to him, "You must be pleased, M. Levret, to deliver the Dauphiness. That will make your reputation." To which Levret answered quietly, "If my reputation were not already made I should not be here." Levret died on January 22nd, 1780.

CURIOSITIES OF THE THESIS.

IN an article entitled "The Thesis," which appeared in the JOURNAL of March 9th, some specimens of the subjects chosen for the inaugural dissertation for the degree of Doctor of Medicine in the old University of Paris were given. A few others may amuse our readers. The knotty question whether the fetus resembled the father more than the mother is said to have been discussed by a candidate as far back as 1376; the date may perhaps be considered doubtful. In 1612 we find a candidate arguing that sexual intercourse both produces and stops disease, and another in 1616 discussing whether sexual intercourse is proper for the jaundice of lovers. Is this the jaundice of jealousy? The temperance question was before the medical world in the seventeenth century, for in 1622 we find a thesis on the wholesomeness of water as compared with wine. The question whether heroes are born in the tenth month (1637) might interest the modern eugenist. In 1644 the subject propounded for debate was whether baldness is a result of excessive venery. Bald men nowadays say that the loss of hair is the consequence of overaction of the brain which draws nutrition from the scalp, but there are scoffers who regard this explanation as about as valid as Falstaff's statement that he had lost his voice by singing anthems. A curious question discussed in an affirmative sense by one du Cerf in 1704 is whether man originated from a worm. Is this an early glimpse of evolution? In 1711 de Jussieu held that the maternal blood does not supply nourishment to the fetus. There is a sort of adumbration of very modern views in the thesis upheld by J. F. Leaulté to the effect that the testicles are of great importance in stimulating fertility of mind. The question of the therapeutic use of music was discussed in 1624. The ungallant thesis that woman is an imperfect work of nature was defended in 1646. In 1743 a candidate deals with a question which has been debated by Mr. Andrew Lang and several other modern writers—whether men of letters should marry. The examples we have quoted are taken, as we have said, from a list of theses presented for the doctor's degree. But the thesis was a sort of intellectual duello all through the Middle Ages. It used to be the custom for scholars to go about to various universities offering challenges to all and sundry to debate *de omni scibili*. The Admirable Crichton furnishes a notable instance. In Paris he had posters stuck on the doors of all the colleges announcing his readiness to discuss any subject with any opponent in prose or verse, in Hebrew, Syriac, Arabic, Greek, Latin, Spanish, French, Italian, English, Dutch, Flemish, or Sclavonic. He acquitted himself so well that the President of the College of Navarre, where the debates were held, presented him with a diamond ring and a purse of gold. His success was equally brilliant in Rome, Venice, Padua, and elsewhere. James Crichton was born in Scotland in 1560 and educated by George Buchanan with his other pupil, James VI of Scotland (James I of England), whom he boasted he had made the wisest fool in Europe. The accounts of Crichton's learning and debating powers are doubtless grossly exaggerated; they rest mainly on the authority of that very uncritical writer, Thomas Urquhart. The challenge to all comers to debate any question survived into the eighteenth century, for it is on record that Oliver Goldsmith "disputed his way" through Europe. It is not likely that poor "Goldy," who "talked like poor Poll," would have been very brilliant as a debater. It is more likely that he took advantage of an almost extinct custom that any one throwing down the gauge of battle at a college or university should be entitled to bed and supper. Probably by that time academic persons were glad to shut the challenging disputant's mouth on such easy terms. An amusing instance of the misadventures to which those who challenged the learned to debate is related in the life of Sir Thomas More:[1] "When an arrogant fellow at Bruges had given it out that he would answer whatever question could be proposed to him in any art whatever, More caused to be put up, '*utrum averia capta in Withernamia sunt irreplegiabilia*,' adding that there was a person in the retinue of the English Ambassador who would dispute with him on the question. These law terms were worse than Coptic to the braggadocio, who knew not what reply to make and was laughed at." It is curious to read that the thesis presented by Walter Scott for admission to the Scottish Bar was *De cadaveribus damnatorum*, in which he discussed how the bodies of executed criminals should be disposed of, and it is a gruesome coincidence that the thesis was dedicated to the great hanging judge Braxfield, the original of Stevenson's Weir of Hermiston.

A SCHOOL CLINIC.

DR. R. TRIBE, Medical Officer to the Deptford School Clinic, has reprinted from *School Hygiene* a paper on the result of treatment at the Poplar School Clinic, in which the work done between December, 1908, and December, 1910, is reviewed. However laborious it may be to record and present the statistics of such a clinic and to explain the difficulties, trivial as well as great, which had to be encountered, it is certain that it is almost imperative at the present time to do so, for information is needed as to the best methods to adopt in the treatment of school children found defective upon inspection. The author has succeeded in making clear that a very large amount of patient and successful work has been accomplished, but he has not given as much information as could be desired

[1] *Memoirs of Sir Thomas More*, with a new translation of his *Utopia*, his *History of King Richard III.* and his Latin poems. By Arthur Cayley, the younger, Esq. Published by Cadell and Davis, Strand, London. 1808. Vol. i, p. 247.

towards the solution of the problems raised. He begins with a short paragraph headed "Organization," which tells us little, except that all dressings and treatment were carried out by a nurse who was allowed to do this work within the school buildings, an arrangement which, it is stated, ensured the regular attendance of the children and occasioned a minimum of interruption to their studies. We are not told how many hours of the doctors' time the examination entailed or how many of the nurses. Nothing is said of the expenses of the scheme, either in organization or in drugs. There follows an analysis of 201 cases out of a total treated of 450. It would be better in any future report to avoid any selection of cases and to include all in the statistics. Of the 201 cases, 94 are described as cured and 21 as benefitted, while 67—a surprisingly large number, when we consider that the report embraces a period of two years—are still under treatment. Dr. Tribe then describes the effects of treatment under the headings ear disease, throat and nose, anaemia and debility, skin, tuberculosis, eyes, and general ailments, and finds place for a few general deductions. Under the heading "Conclusion," he writes: "Perhaps the chief lesson is the great value of a school clinic in co-operating with all the work done for the child, the country holiday, the home conditions of poverty, the choice of a career on leaving school, the need for feeding the necessitous, and the relation of physical fitness to educational efficiency." With this we heartily agree. It is information on all these points which is especially desirable, and yet not one of these important matters is mentioned in the body of the article. The paper seems to us to suggest the advisability of instituting in such clinics a combined and organized inquiry into these points upon lines selected and arranged beforehand.

LIFE ASSURANCE AND ABSTAINERS' LIVES.

THE report of the directors of the Sceptre Life Association contains the usual comparison between the mortality of its abstaining and non-abstaining policy holders. In 1911 in the general section the mortality was 77.78 per cent. of that expected; that is to say, there were 105 out of 135 expected deaths. In the temperance section 51.11 per cent. of the expected deaths occurred, or 69 out of 135. For the last 28 years the percentage of actual to expected deaths has been in the general section 79.70; in the temperance section 52.45. It is necessary to remember that the comparison is not between the average man and woman. It is between insurable abstainers and insurable non-abstainers; that is to say, between those in whose expectation of life examiners found no flaw. Both classes are the company's choice of safe, insurable, profitable lives. It is as if men started on a race, the race of life. The essence of a race is a fair start. This the competitors get. As Sir Thomas Whittaker says of the United Kingdom Temperance and Provident Institution, "the policy-holders in the respective sections are of similar social status, and are engaged in the same occupations. They live in the same towns, often in the same streets, and have similar incomes. So far as it is possible for the most careful observers, after full opportunity and experience, to say, the people are precisely the same in all important and essential particulars, with the single exception that those in one section are abstainers and those in the other section are non-abstainers." At the start all are examined, and only the fit and strong are allowed to start. The abstainers last better and go further than the non-abstainers. During the race some of the non-abstainers may take more drink than is good for them. A runner on the cinderpath would forfeit sympathy if he lost a race from such a cause. If he handicaps himself during the race, well, that is his own look-out, and he must abide by the result. Moreover, it is difficult for any but a moderate drinker to get insured. The examining doctor is alert, and the man himself must make a declaration of sobriety in the proposal which is the contract between him and the company. The exceptions to the rule that each individual among the non-abstainers was strictly sober and temperate when he received his policy are too few to invalidate the conclusion that among insurable persons total abstinence tends to longevity.

A PUBLIC HEALTH DILEMMA AT CHICHESTER.

AT a meeting on March 15th the council of the City of Chichester with a view to emerging from the difficulties it has experienced in meeting the somewhat opposing views of itself, a section of the ratepayers, and the Local Government Board (BRITISH MEDICAL JOURNAL, March 9th, p. 568), definitely rescinded the appointment as Medical Officer of Health previously made and selected for the appointment Dr. A. M. Barford. Possibly, therefore, its problem is now solved; still, apart from the desire of the Local Government Board for an arrangement of a different kind, one small difficulty would appear to remain—that is, that Dr. Barford, when thus appointed, was still county and school medical officer for the Isle of Wight, as well as the holder of a specialist appointment on the staff of a Portsmouth hospital. It is true that just before the voting took place one of the Chichester councillors reported that Dr. Barford had told him that he was resigning the Isle of Wight appointment, but, curiously enough, at a meeting of the Isle of Wight County Council, which is reported in the *Isle of Wight County Press*, and appears to have been held during the same week, its chairman indicated that he had received information that Dr. Barford was about to comply with the requirements of that council by taking up his residence in the island forthwith. At this Isle of Wight meeting the question was brought up by Mrs. Russell Cooke, who said that she understood that Dr. Barford's work was in itself quite satisfactory; but, on the other hand, it was extremely unsatisfactory that their medical officer should reside in Chichester. They never knew where their medical officer was to be found; he might be in the island and doing his work, but he was not properly in touch with the central office of the Education Authority. They all knew of the controversy that took place over the dismissal of Dr. Gibson from his appointment, but it seemed to her they had fallen out of the frying-pan into the fire. Another councillor said it was rather a bad time to bring the matter forward, for recently the Education Authority had had to deal with what was practically a strike among medical men, since the medical journals would not insert the council's advertisements, practically saying "because you will not have Dr. Gibson, you shall have nobody else." This statement appears to be the speaker's gloss on the fact that when last year it became generally known that the Isle of Wight County Council proposed to supersede an officer who had rendered excellent service unless he agreed to accept more work at a lower salary, the *Lancet* and the BRITISH MEDICAL JOURNAL declined to insert an advertisement of the appointment, while of the twelve candidates who had sent in their names in due course, all but three, namely, Dr. Barford and two others, cancelled their applications.

AT the third International Laryngological Congress held in Berlin in September, 1911, it was resolved that ozaena should form the subject of a collective investigation, the results of which should be presented to the next meeting of the Congress, which will take place at Copenhagen. An executive committee, consisting of Professors Rosenberg, Grabower, and Alexander, of Berlin, was appointed to institute and direct the work. It was agreed that a laryngologist should be appointed in every country to carry out the investigations.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

Fourth Meeting.

THE fourth meeting of the State Sickness Insurance Committee was held on March 21st. Mr. T. JENNER VERRALL was in the chair, and the members present were: *England and Wales:* Dr. R. M. Beaton (London), Dr. John Brown (Bacup), Dr. T. M. Carter (Westbury-on-Trym), Dr. S. Hodgson (Salford), Dr. R. E. Howell (Middlesbrough), Miss M. H. Frances Ivens, M.S. (Liverpool), Dr. Constance E. Long (London), Dr. R. A. Lyster (Winchester), Dr. James Pearse (Trowbridge), Dr. F. M. Pope (Leicester), Dr. Lauriston E. Shaw (London), Dr. W. Johnston Smyth (Bournemouth), Dr. D. G. Thomson (Thorpe, Norwich), Dr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Dr. A. H. Williams (Harrow on the Hill), Mr. D. J. Williams, F.R.C.S. (Llanelly), Mr. E. H. Willock (Croydon). *Scotland:* Dr. J. Adams (Glasgow), Dr. Bruce Goff (Bothwell), Dr. J. Munro Moir (Inverness). *Ex Officio:* The President (Professor Saundby), Dr. E. J. Maclean, Chairman of Representative Meetings; Dr. J. A. Macdonald, Chairman of Council.

Apologies for absence for unavoidable reasons were received from Dr. F. W. Kidd (Dublin), Dr. E. O. Price (Bangor), and Dr. J. S. Darling (Lurgan).

REGULATIONS OF COMMISSIONERS.

A Regulations Subcommittee was appointed to consider all matters to be dealt with in the Regulations of the Insurance Commissioners, with the exception of questions of remuneration, which had already been referred to the Remuneration Subcommittee appointed by the Committee at its meeting of March 7th. The following were appointed to the Regulations Subcommittee: Dr. R. M. Beaton, Dr. J. A. Macdonald, Dr. Lauriston Shaw, Mr. E. B. Turner, and Mr. Verrall.

ORGANIZATION OF THE PROFESSION.—PUBLIC MEDICAL SERVICE.

The Committee again considered Minute 54 and resolved that the concluding paragraph, which is as follows:

> Further, after obtaining the adequate rate, the Representative Body shall insist that before any member of the profession can agree to accept work under a contract appointment free choice of doctor by patient and of patient by doctor must be granted,

should be considered along with Minute 59, which was as follows:

> That the Council be instructed to direct the attention of Divisions to the desirability of preparing a scheme for a Public Medical Service to be administered by the medical profession in each insurance area.

The model rules for a public medical service prepared in 1909 and then sent to the Divisions was referred to an Organization Subcommittee for consideration, and report in connexion with Minute 54 (part) and 59 quoted above. The following members of the Committee were appointed members of this Organization Subcommittee: Dr. John Brown, Dr. R. E. Howell, Dr. Constance Long, Dr. R. A. Lyster, Dr. Pope, Dr. E. O. Price, and Mr. Verrall.

INSURANCE DEFENCE FUND.

The Committee considered the following minute of the Representative Meeting:

> That the Council be instructed to report to the Divisions as to the best means of acquiring the powers necessary for raising funds, and using them for the purpose of indemnifying members against financial loss owing to the action of the Association.

After a brief discussion the Committee, acting under the advice of Mr. Colquhoun Dill and Mr. Hempson in respect of the Insurance Defence Fund, expressed the opinion that it was not necessary to seek any such fresh powers as the minute suggested.

JOINT ACTION WITH OTHER BODIES.

It was reported that conferences had taken place between the Committees appointed by the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London, and that at a joint meeting on March 5th the representatives of the three bodies had resolved to invite the medical faculties of the Universities of England and Wales to send representatives to a meeting which was to be held on that day (March 21st). The object of the meeting was to safeguard the interests of graduates, licentiates, and fellows and members of the several universities and colleges in so far as they might be affected by the National Insurance Act. The State Sickness Insurance Committee adopted a resolution welcoming the co-operation of these bodies, and declaring its readiness to meet their representatives in conference if and when occasion arose.

CO-OPTION.

On the motion of Dr. TODD, seconded by Dr. HOWELL, the Committee co-opted Mr. J. Neal (Birmingham), one of those selected by the Association for nomination to the Joint Advisory Committee, to be a member of the State Sickness Insurance Committee.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

National Insurance Act.

Medical Benefit.

MR. CASSEL asked the Secretary to the Treasury if he would state what would be the position of an insured person during the prescribed time within which he had the option of joining an approved society or becoming a Post Office contributor; by whom would his benefits be administered if he felt ill during such period; and from whom would he receive sick pay.

Mr. Masterman said that it was not the present intention of the Commission to prescribe a longer period for this purpose than the minimum waiting period for sickness benefit. The last part of the question did not, therefore, arise.

Mr. Cassel asked the Secretary to the Treasury when a member of an approved society attained the age of 70, and ceased to pay contributions, could the society still be liable to make the same payments or any payments in respect of such member to the Insurance Committee to provide medical benefits; if not, from what source would the doctor and chemist be paid for medical benefit for such member.

Mr. Masterman replied that the payments made by an approved society to an insurance committee for medical benefit would be made on account of all the members of a society, and not of any particular member. They would be paid out of the funds of the society as built up by the contributions made in respect of all the members and the reserves accumulated in respect of them.

Workmen's Medical Funds.

Mr. Richards asked the Chancellor of the Exchequer if he had received an application from the workmen's medical funds of Monmouthshire that a representative acquainted with workmen's medical funds should be appointed upon the Advisory Board of the National Insurance Act Commissioners; and whether he proposed to grant such representation. Mr. Masterman said that the answer to both parts of the question was in the affirmative.

Unemployed Benefits.

Mr. William Thorne asked whether all workmen in insured trades under the National Health Insurance Act, Part II, would receive benefit in circumstances similar to those at present existing, whereby many thousands of workmen are thrown out of employment through lack of fuel and material, as a result of the mining industry dispute, although themselves not in dispute with their employers. Mr. Robertson said that workmen not themselves engaged at a coal mine who were thrown out of work as a consequence of a dispute affecting coal miners in the circumstances mentioned in the question would, generally speaking, not be disqualified for receipt of unemployment benefit under Part II of the National Insurance Act. The decision, however, as to the qualification of any person would rest with the courts of referees or the umpire, and not with the Board of Trade.

Pure Milk Supply.—In reply to Mr. Crumley, the Chief Secretary for Ireland said that the Local Government Board had no reason to believe that the boards of guardians, the controlling authorities of workhouses in Ireland, were not exercising due supervision over their respective milk supplies. In any case the responsibility of inspecting the premises of milk vendors primarily devolved on the various sanitary authorities.

Vaccination and Vaccination Officers.—A short debate arose on Monday at question time between Mr. Peto and Mr. John Burns. The former wanted to know if the Local Government Board would state the dates of communications from Mr. A. T. Emmerson, one of the vaccination officers for the South Shields Union, with regard to his loss of income in consequence of the Vaccination Act and Order, 1907, and what action, if any, had been taken with regard thereto; and whether this officer's total loss now amounted to over £100, and in consequence of such loss he was placed in financial difficulties. Mr. Burns said he had received only one communication from this officer with regard to his loss of income, and this was on September 29th, 1910. He communicated with the guardians, who thereupon increased his fees. According to the figures, the total diminution in Mr. Emmerson's earnings as vaccination officer, as compared with his average earnings in the five years 1903–7, was about £120. Towards this the guardians had awarded him gratuities amounting to £50 7s. 8d. before they increased his fees, and had appointed him to the additional offices of deputy registrar of births and deaths and infant protection visitor. His new scale of fees began to operate in 1911. His income from vaccination fees in that year was about £132. He had no information as to the amount of his receipts from the other offices. Mr. Peto then asked if a gratuity of £50 was adequate compensation for the loss of an income of £120. Mr. Burns replied that the £120 referred to should really be reduced to £103 by the diminution of births. Beyond that, this officer had had the birth fees increased from 3d. to 4d. and the vaccination fees from 9d. to 11d. This gave him an increase of £40 or £50, and in addition he had been appointed to other offices—an excellent way of meeting this grievance—and for this, of course, he would receive extra remuneration. Mr. Peto then asked how many vaccination officers had written that they had applied to their boards of guardians for a gratuity in respect of their past losses in consequence of the Vaccination Act and Order, 1907, and for an increase in the bases of their remuneration with regard to the future, and that such application had been refused; and in how many of such cases the Local Government had, after communicating with the boards of guardians concerned, informed the officer that his case, in the opinion of the Board, was not one in which they could interfere. Mr. Burns said the answer to the first part was fifty-four, and to the last part of the question 6. Mr. Peto also asked for the results of the communications made to boards of guardians after the debate of August last, and Mr. Burns said that he had written to eight boards of guardians as indicated in the question. Two of these boards agreed to pay amounts somewhat less than those suggested, and their proposals had been sanctioned. In other cases correspondence was still proceeding.

The Health Resorts and Watering Places (Scotland) Bill seeks "to empower local authorities in Scotland to impose a rate for advertising health resorts and watering places." It was presented by Mr. Munro Ferguson, supported by Sir George Younger, Sir Henry Dalziel, and Captain Waring, and will be read a second time at an early date.

University of London (New Site).—Sir Philip Magnus asked whether the Government had appointed a trustee or trustees in connexion with the proposal for providing a site in Bloomsbury for the head quarters of the University of London; and whether the Senate of the University had been informed of the proposal and had expressed any opinion thereon. The Prime Minister said that the Government had not appointed a trustee or trustees for the purposes described. A body of trustees was, however, being constituted, one of whom was a member of the Government, to receive gifts offered in connexion with the recommendations of the Fourth Report of the Royal Commission on University Education in London. A generous gift had been made on condition that a particular site was acquired. The question of its suitability was one affecting the future organization of the university, a matter on which the Senate had found itself unable to offer any evidence to the Royal Commission.

Vivisection Commission.—Dr. Chapple asked the Secretary of State for the Home Department if he would give the cost of the Commission on Vivisection; and whether he would consider the advisability in future reports of abstracts of evidence giving the substance only instead of verbatim reports of question and answer being printed, and of the whole being put up in octavo size and book form. Mr. McKenna said that the expenditure had amounted to about £5,674. He feared that mere abstracts of the evidence would not have satisfied the persons and societies who were keenly interested in the subject of vivisection. The question of printing reports was mainly one for the Stationery Office; but he might point out that the number of volumes would be greatly increased if the use of the existing double-columned foolscap page were discontinued.

Insanity (Ireland).—In reply to Mr. Ginnell the Chief Secretary for Ireland stated that the number of persons during the five years 1906–1910 (the latest date for which information was available) in Ireland, certified by medical practitioners as insane, who were released as sane (recovered) within twelve months from District and Auxiliary Asylums was 5,506. The cost to asylums in respect of these persons could not be given, as the record of their cost was not kept distinct from that of the other patients. The Local Government Board had not made a rule that no fee should be paid to the examiner unless he gave a certificate of insanity. The majority of admissions to Irish public asylums were effected under the 10th Section of the Act 30 and 31 Vict., cap. 118. The payment of the fee in such cases was regulated by the 14th Section of the Act 38 and 39 Vict., cap. 67, which left the matter at the discretion of the committing magistrates.

Blackpool Small-pox Hospital.—Mr. Sutton asked the President of the Local Government Board whether he had been asked to sanction the conversion of the small-pox hospital maintained by the borough of Blackpool and the districts of Fylde, Preston, and Garstang, into a sanatorium for tuberculous patients on the ground that it had never once been used since its erection ten years ago; if so, whether he had given the consent requested; and whether the result of the neglect of vaccination, through the Vaccination Acts of 1898 and 1907, had been to make small-pox liability less than had ever before been known in Great Britain. Mr. Burns said that with regard to the first part of the question he had received an application from the joint board who maintained the hospital referred to for an Order to empower them to treat cases of pulmonary tuberculosis at the hospital, and a local inquiry was held in regard to it. The inspector who visited the site of the hospital reported that it was not suitable for the treatment of pulmonary tuberculosis, and he had informed the joint board that he did not propose to make any Order in the matter. With regard to the second part of the question, he preferred to express no opinion.

Vaccination (Ireland).—In reply to Mr. Clancy, the Chief Secretary stated that the use of arm-to-arm lymph was not largely resorted to by certain doctors in Ireland. In the year ended March 31st, 1911, the Poor Law medical officers in Ireland as public vaccinators performed upwards of 80,000 successful vaccinations, for which purpose they requisitioned and procured from the Vaccine Department of the Local Government Board 115,000 tubes of glycerinated calf lymph. As each tube contained sufficient lymph for at least one vaccination, it was obvious that humanized lymph could only have been used in a few odd cases. The Local Government Board distributed gratuitously the requisite supplies of glycerinated calf lymph for public vaccinations, and so far as it was aware no further action was necessary on its part to secure the universal use of this form of lymph in Ireland.

Health of Telephone Operators.—Mr. William Thorne asked the Postmaster-General whether he would state what were the terms of reference given to the medical officers who reported on the conditions of telephone working; and whether the report as published contained the whole of the conclusions submitted to him by the medical committee. Mr. Herbert Samuel replied that the terms of the reference were as follows: "To inquire whether the conditions of working of telephone operators are such as are likely to be prejudicial to the health of the operators; and if, in their opinion, the work as at present carried on is unduly trying to girls and women such as those selected for employment in the service, to report, in consultation with one of the practical officers of the department who would be nominated for the purpose, what remedial measures are practicable and advisable." The report as published contained the whole of the conclusions submitted to him by the medical committee.

Industrial Poisoning Cases.—Mr. Ramsay Macdonald asked for the number of cases of industrial poisoning reported in 1910 to 1912. Mr. McKenna said the cases of industrial poisoning by lead, mercury, arsenic, and anthrax in factories and workshops notified under Section 73 of the Factory Act numbered, in 1910, 573, of which 48 were fatal; in 1911, 755, of which 44 were fatal; in January of this year, 42, of which 7 were fatal. There had been no cases of phosphorus poisoning since 1909. Cases of industrial poisoning from other causes and in other industries were not required to be notified to the Home Office.

Small-pox and Vaccination.—Mr. Courthope asked the President of the Local Government Board whether he had received communications from boards of guardians with reference to the danger to the community of an outbreak of small-pox, owing to the increasing tendency of parents to procure exemption from vaccination for their children; and what steps he proposed to take in the matter. Mr. Burns replied that the guardians of the Wirral Union passed a resolution expressing the view indicated in the question, and sent a copy of the resolution to the other boards of guardians in England and Wales. About eighty of the other boards, some 650 in number, had informed him that they had passed a similar resolution. He did not at present think it necessary to take any steps in the matter.

Osborne Naval College.—Mr. Burgoyne asked the First Lord of the Admiralty whether it was the intention of his Board to abandon Osborne as a training college, owing to the constant ill health amongst the naval cadets there. Mr. Churchill replied that there was no foundation for the allegation contained in the hon. member's question. Excluding epidemic diseases, the average number on the sick list daily during 1911 was seven, or under 2 per cent. The epidemic diseases were not attributable to the buildings, and the number suffering from these diseases were not greater than was to be expected in boys of that age.

Deaths from Uncertified Causes.—Mr. George Greenwood asked the Secretary of State for the Home Department if he would state the number of deaths of which the causes were not certified in England and Wales in each of the five years 1907 to 1911, inclusive. Mr. Burns said that the number of deaths from uncertified causes were as follows:

1907	7,596
1908	7,477
1909	7,021
1910	6,658
1911 (provisional)	6,666

The term "uncertified cause" here signifies a cause of death not certified either by a registered medical practitioner or by a coroner after inquest.

Milk Tests.—Mr. Mount asked the President of the Local Government Board whether he was aware that samples of milk for the purpose of testing for tuberculosis had been of late taken from churns arriving in London without first mixing the milk; and whether, in view of the fact that this abstraction of the cream would prejudicially affect the milk if it were afterwards tested for fat, he would give instructions that no samples should be taken in future until the milk was properly mixed. Mr. Burns said that he was advised that the method of taking the samples was such that the percentage of fat in the milk was not likely to be altered to any material extent.

Milk Preservatives.—In reply to Mr. C. Bathurst the President of the Local Government Board said that the draft regulations which he had had prepared proposed to prohibit the use of formalin in cream, but not to prohibit the use of boric acid, borax, or a mixture of those preservative substances, provided that a full declaration of the presence of the preservative and the amount added was made in the manner prescribed by the regulations. The considerations which had been taken into account in framing the draft regulations in question were dealt with in Dr. Hamill's report to the Local Government Board respecting the use of preservatives in cream.

Asylums Officers.—Mr. Rowlands asked whether any alteration had taken place in the hours of labour and other conditions of the asylums officers since the Report of the Select Committee of 1911; and, if not, whether it was the intention of the Government to promote legislation to carry out the improvements recommended. Mr. McKenna said that he was informed by the Commissioners in Lunacy that, although in certain asylums there had been some reduction in the hours of duty and some alteration in the other conditions of asylum officers' service, there had been no general alteration in these respects since the Report of the Select Committee. The Government could not undertake to promote legislation on the subject. The bill which was considered and amended by the Select Committee had been reintroduced this session.

Vaccination of Soldiers.—Mr. George Roberts asked the Under Secretary for War if it had been decided that, when soldiers were admitted to hospital suffering from the effects of vaccination, the disability might be considered as sickness caused by military service; and, if so, would he consider the advisability of reducing the extent and expense of liability to disablement by vaccination by conceding to soldiers the right of exemption on the ground of conscientious objection. Colonel Seely said that the reply to the first part of the question was in the affirmative, and to the second part in the negative.

Sleeping Sickness (Nyasaland).—In reply to Dr. Chapple, the Secretary of State for the Colonies said that the total number of cases of sleeping sickness recorded in Nyasaland up to the end of 1911 was 57, of which 21 were known to have died. He was not in possession of any statistics to show how many domestic animals had died from trypanosomiasis, and he was not aware that any trade routes had been closed. It should not be assumed that a relaxation of the big game laws was in the interest of humanity and commerce—that was to say, that the presence of the large wild animals, and of those alone, was prejudicial to human life and to trade, presumably by their bringing the tsetse fly with them. It had not been shown that if these animals were to disappear the fly would disappear also; and in any case many animals would remain on which the fly could feed. In the island of Principe, where the fly abounded, there was no big game. The Governor of Nyasaland was in communication with Sir David Bruce, who was at work in his laboratory in the sleeping sickness area in the protectorate, and had been instructed to furnish him definite recommendations as to preventive measures of any kind as soon as Sir D. Bruce was in a position to make them. He should not hesitate to take any steps, however drastic, so soon as their necessity was proved.

Plague in India.—Mr. Chancellor was informed last week by the Under Secretary that the latest return of plague mortality was for the month of January, 1912. The deaths were 49,229, against 91,434 in January, 1911. The areas most affected were in the United Provinces of Agra and Oudh, the Hyderabad State, and the Bombay Presidency. As far as could be judged at present, the disease was less virulent than in the preceding year, but there were still two months before the period of maximum intensity would be reached.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LEEDS.

THE GENERAL INFIRMARY.

THE twelve months ending December 31st, 1911, which is the period covered by the annual report submitted to a meeting of subscribers held on March 14th, has been a period of strenuous work and of considerable anxiety to those interested in the welfare of the General Infirmary at Leeds. In the first place, it will be remembered that the disastrous fire which occurred towards the end of 1910 put the whole of one block, containing upwards of ninety beds, out of use. It was decided to make extensive structural alterations in this block to render it more accessible, easier to work, and better lighted. The result of this was that for nearly twelve months, and for about nine months of the period covered by the report, the pressure on the remaining beds of the infirmary, always high, was seriously increased. It is true that accommodation was found for a considerable number of beds in small rooms, not originally designed for wards, but "differentiated through force of circumstances" so as to act in that capacity, but it is to be hoped that the infirmary will not again be subjected to such a degree of strain as has been experienced during the year 1911. The alterations in the new block, which have been described in this column already, have proved very satisfactory.

From a study of the tables presented at the annual meeting and printed along with the annual report, it is seen that the total number of in-patients treated within the walls of the infirmary during the year 1911 was 7,524. The total number of admissions was 7,124, which was 370 less than during 1910. The medical patients have increased by 59 and cases of accidents by 108. Of general surgical cases there were admitted 223 fewer than during the previous year. The number of eye cases was less by 251 and of ear cases by 50.

In consequence of the provision of emergency accommodation for beds as described above, but more especially as the result of the margin of unoccupied beds being very small, the average daily number of patients in the infirmary showed a diminution of only 3, being 374, as against 377. The number of deaths was 525; when the number of deaths occurring during the first forty-eight hours is deducted the death-rate works out at 4.8 per cent. The out-patients amounted to 47,865, a decrease of about 3,350; but, on the other hand, the total number of attendances of patients in the out-patient department has increased from 203,958 to 217,034.

In proposing the adoption of the annual report and balance sheet, the Chairman of the meeting, Mr. Charles Lupton, commented on the work of the past year, calling attention to the pressing necessity that existed for an increase in the accommodation at the infirmary. He said that the changes in the infirmary which it was hoped would prove a worthy memorial to the late King Edward might be considered under two heads. There was, in the first place, the reconstruction of the wards, which, indeed, had been going on for some time, and which would have to continue until all the wards had been completely overhauled. This was an expensive but a necessary proceeding, rendered imperative by the fact that the infirmary had been in continual use for more than forty years, and that the views which prevailed at the time the infirmary was opened for the reception of patients had undergone considerable alteration and development during that time. In the second place, there was the demand for extension, and this necessitated the acquiring of land adjoining the present buildings. The sum of £150,000, which had been mentioned as necessary for the carrying out of these ideals, was the smallest amount which would enable the plans to be entered on with any hope of their being carried to a successful conclusion. Of this sum there still remained to be collected about £40,000, and Mr. Lupton again appealed to the public of Leeds and of Yorkshire to come to the assistance to the Board of Management.

The changes in the staff were referred to. Owing to the death of Dr. Trevelyan following so soon on the decision of the board to appoint a third assistant physician, two appointments had to be made within a comparatively short period to the assistant staff. To these positions Dr. Watson and Dr. Veale were appointed in succession. In consequence of the rearrangement of the special departments dealing with the diseases of the eye and ear, a new appointment to the department for the diseases of the ear, nose, and throat had been created, and to this position Dr. Bain had been elected.

In the report comment was made as to the working of the system of lady almoners, which was established in 1910 in conjunction with the public dispensary and the Hospital for Women and Children. By the work of these almoners much assistance and guidance have been given to the patients, and the directions of the surgeons and physicians, more especially of those in charge of out-patients, have been more effectually carried out than formerly. It is also stated that the board have under consideration the establishment of a separate department for massage and for physical exercises. This must involve the provision of extra accommodation, and cannot be undertaken until the proposed extensions are carried out.

MANCHESTER.

THE MANCHESTER SCHOOL FOR MOTHERS.

SOME few weeks ago the Manchester School for Mothers decided to advertise for a medical officer to devote his whole time to the work of the school, but the local Divisions of the British Medical Association considered that the conditions of the appointment were such as might interfere with the work of general practitioners, and a Warning Notice was inserted in the JOURNAL. The Medical Subcommittee of the school, however, had an interview with a deputation from the Joint Committee of the Divisions of Manchester and Salford, and as a result the conditions of the appointment were altered in a way that was considered satisfactory, and the Warning Notice was then discontinued. The work done by the school was well described in the report of the managing committee to the annual meeting of subscribers, which was held in the Lord Mayor's parlour last week. It was stated that four schools had been opened in Ancoats, Hulme, Openshaw, and Collyhurst, at which mothers were provided with meals and received advice on all matters connected with the feeding, care, and clothing of their infants. During 1911 there were 3,238 attendances at lectures, 6,530 dinners were provided, and 8,457 visits were paid at the homes of the mothers by the permanent staff and voluntary workers. The arrangements about any visits by the salaried medical officer who is to be appointed are such as ought to guarantee that there will be no interference with any medical practitioner in attendance, and no inducement to mothers to trust to obtaining free medical attendance from the school in preference to calling in a private medical attendant. It was stated that the school would require about £900 during the coming year in order to carry out the work it proposed, and only about £360 had been promised in subscriptions. About £1 was required to provide for a mother and baby in a year, and before it would be possible to extend the operations by opening out the six other branches proposed a further sum of £1,000 would be needed. Dr. Hutton, the vice-chairman, contrasted the infant mortality-rate of St. Anne's, which was 90, with that of some parts of Manchester, where last year the rate had reached 216. One of the most potent causes of this was poverty and the School for Mothers tried to remedy that to some extent by providing meals for the mothers. There can be no doubt that good work is being done by the school, and its desire to work in full harmony with the medical profession of the district is shown by the fact that it has invited the Joint Committee of the Divisions to nominate a medical representative on its Medical Subcommittee, an offer which has just been accepted.

SCHOOL CLINICS.

A conference on school clinics was held last week in Manchester under the auspices of the Manchester University Settlement, the chair being taken by Mr. W. F. Lane Scott, of the Manchester Education Committee. The chairman said there was no immediate prospect of school clinics being established for Manchester, chiefly

because of the lack of any Government grant for the purpose. He had no information as to whether the children would really benefit by clinics in Manchester, seeing that there were already five hospitals freely open to children where they could get the very best talent for medical and surgical attendance, and he wondered whether that same talent would be at the disposal of any smaller institution like a school clinic. Two papers were then read, one by Dr. Lewis Williams, the medical superintendent of the Bradford Education Committee, and the other by Mr. W. Jones, the borough dentist of Cambridge, describing the work done by clinics at Bradford and Cambridge respectively. A resolution was proposed by Dr. Mumford, seconded by Dr. Vipont Brown, and carried, urging the desirability of providing fuller facilities for caring for the health of children than at present existed in Manchester.

The Manchester Education Committee is responsible for the teaching of nearly 140,000 children, about 80,000 of whom go to municipal schools, 37,000 to Church of England, 20,000 to Roman Catholic, and 3,000 to Jewish Schools. There are over 400 elementary schools, and the total cost is something like half a million sterling a year. The actual teaching in the year 1910 cost about £315,000, and there were over 3,700 men and women teachers, about two-thirds of whom are in the municipal schools and the rest in the non-provided schools. Towards the cost the ratepayers provided £263,000, the annual Government grants were £111,000, while fee grants amounted to £50,000, and grants in aid to £43,000.

LONDON.

Site and Senate House for the University of London.

Lord Haldane, Chairman of the Royal Commission on University Education in London, and Government representative on the body of trustees to be constituted for receiving gifts in connexion with the recommendations of the fourth report of the Royal Commission, has been informed by Sir Francis Trippel that the trustees of Bedford Estate have offered a reduction of £50,000 in the price of the site north of the British Museum, and that the Duke of Bedford will make a personal contribution of £25,000 towards the acquisition of this site. Sir Francis Trippel holds an option from the Duke of Bedford for the purchase of the site, and has undertaken, acting in an honorary capacity, and bearing all incidental expenses, to raise £1,000,000 for the erection of such new head quarters for London University as will be worthy of the capital of the Empire. It was announced on Monday that a "Friend of London University," who desires to remain unknown, has intimated to Sir Francis Trippel his willingness to give £70,000 towards the purchase of the site. With another gift of £50,000 announced on March 28th the total sum subscribed is now £355,000. At a meeting of the Senate of the University of London on March 20th, the Vice-Chancellor, Sir William Collins, M.D., said that no communications had been received at the university from the Government, the Royal Commission or the Chancellor on the subject of the appointment of trustees to carry out the scheme for the removal of the head quarters of the university to a site to the north of the British Museum. He had written to the Chancellor, Lord Rosebery, stating that the Senate, being the governing and supreme body of the university, had a right, at least, to be consulted before the Government, a Royal Commission (vested only with advisory powers), or even its Chancellor committed the university to the transfer of its quarters to a new site. He had received no reply from the Chancellor, and, in view of the procedure adopted, desired to resign his office as Vice-Chancellor. On the motion of the Chairman of Convocation, seconded by Dr. Waller, the Vice-Chancellor was asked to reconsider his decision, and consented to do so. It appears that on the same date Lord Rosebery had written to Sir William Collins from Edinburgh stating that he was not aware that any site had been definitely fixed for the new University building, and that he supposed that the most that had been done had been to receive offers of money for the site to be offered to the University. Lord Rosebery added that he had been asked by word of mouth to be a trustee for any sums, and he had not hesitated in accepting, as it was evidently for the benefit of the University that money should be collected for it. He recognized that nothing could be done with regard to moving the University without its consent, and as Chancellor he had committed no one to anything, except so far as concerned himself to acting as trustee for certain sums collected for the benefit of the University of London. In another passage in his letter Lord Rosebery said that he did not feel his dignity to be impaired by the fact that he did not receive any special notification of the sums subscribed, though it might have been proper to inform him, and he doubted if it entered any one's head that the University would object to money being collected for it.

New Institute of Pharmacology.

The second portion of the Medical Institute at University College, Gower Street, to be devoted to Pharmacology, will, it is hoped, be ready for occupation by the beginning of the October session. The building is to adjoin the eastern wall of the present Institute of Physiology, and is to be about half its size. It will consist of a lecture room and a students' laboratory providing accommodation for 100 students, a number of research rooms, and other conveniences. The whole will be completed by the erection of an Institute of Anatomy on the west side of the Institute of Physiology.

SOUTH WALES AND MONMOUTHSHIRE.

The Colliers' Strike.

There is probably no part of the country in which the effects of the coal strike are more felt than in the counties of Glamorgan and Monmouth, where practically every one is in some way dependent on the raising of coal for his means of livelihood. The medical profession engaged in colliery practice suffer loss of income while the strike lasts, and when work is resumed arrears of pay are not always made up. Apart from the loss of income, however, there is, in this strike for a minimum wage, another factor which is causing colliery practitioners some uneasiness, namely, what will be the effect on the aged and less efficient workmen? The opinion of many coalowners seems to be that, if a minimum wage is to be paid to every man who goes down a pit, it will be essential that every workman shall be physically fit to earn at least the minimum wage. Many real colliers, as distinct from those who have taken to cutting coal after years of other forms of employment, are still expert workmen at the age of 65. These men have worked underground from boyhood, and can easily earn more than the minimum wage asked for. But there is a large number of men in every pit who at the age of 60 are done up. Many suffer from disease, and many are partially disabled, but are kept on largely for the sake of their former good work. It is thought possible that one result of a statutory minimum wage would be the discharge of old men and others suffering from any physical disability. In that case, since it is not believed possible that an age for retirement could be fixed which would be fair to all, apparently the only means of weeding out the unfit would be a medical inspection of all those employed. In the coal trade this has never yet been done, and consequently men with aneurysms, aortic disease, ruptures, etc., may be engaged by the manager. Under a system of medical examinations most of these diseases would be detected, and many of the men would probably be refused employment. What, then, would happen if medical examinations were to become the rule cannot be foreseen.

Alleged Self-mutilation.

A case of considerable medico-legal interest was heard at the Glamorgan Assizes at Cardiff last week. A man who had been a miner sued Mr. D. A. Thomas, ex-M.P., and the *Western Mail*, Limited, for damages for libel. The libel was said to be contained in a paragraph which alleged, as an example of the lengths to which some men would go, that the plaintiff had placed his legs on the Taff Vale Railway in order to obtain insurance money. The case had been twice tried in 1905, and it was stated that the plaintiff had sued the railway company, the jury disagreeing at the first and finding against the plaintiff at the second trial. The plaintiff in the present action for libel denied that the jury had found as alleged in the paragraph above, and the whole case was therefore gone

into again, the result being a verdict for both defendants. The plaintiff alleged that a jolt of the train, as he was placing his umbrella on the rack, threw him against the off door, which was improperly fastened. He fell out and struck against a mineral train on the other line, rebounding into the four-foot way. Two trains came along the rails near which he lay, and the second of them cut off both legs. The evidence for the defence was to the effect that the plaintiff was shown to have been short of money, and yet purchased a second class ticket. The guard was certain that no one occupied the second class carriage out of which he alleged he had been thrown, and no door was open. The man who found plaintiff was given clean handkerchiefs by the plaintiff, who showed him how to put them on. On arrival at Cardiff Infirmary the plaintiff told the surgeon that he wished both legs to be amputated between the ankle and the knee. There were otherwise no scratches or bruises on plaintiff, except a slight one over the left eyebrow. He had told his landlady before starting from home that he had dreamt that he would have his legs cut off. In his possession were several papers with accident coupons filled up. One of the coupons stipulated that to make good certain claims both legs must be amputated between the ankle and the knee. The jury found a verdict for the defendants.

Cardiff Waterworks.

A discussion on the development of Cardiff waterworks will be opened at a provincial sessional meeting of the Royal Sanitary Institute at Cardiff on Friday, April 12th, by Mr. C. H. Priestley, M.Inst.C.E., waterworks engineer to the city. The discussion will commence at 5 p.m. in the City Hall. On the following day a visit will be paid to the Cardiff reservoir in the Taff Fawr Valley, Breconshire. Further particulars can be obtained from Dr. E. Walford, M.O.H., Cardiff.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Dunfermline Doctors and the Friendly Societies.

In view of the fact that the local medical practitioners have resolved to increase the tariff to members of friendly societies, the societies have proposed that two new doctors should be brought to Dunfermline, and representatives of the societies applied to Dr. Knight, Honorary Organizing Secretary of the National Insurance Medical Association, who agreed to secure the services of two doctors whenever required. As there seemed to be an impression that Dr. Knight holds an official appointment under the Government in connexion with the Insurance Act, the Secretary of the Dunfermline Lodge of Oddfellows wrote to Dr. Balfour Graham, Honorary Secretary of the Fifeshire Branch of the British Medical Association, for information on the subject. Dr. Graham communicated with the Secretary of the Scottish Insurance Commission, who replied that Dr. Knight holds no appointment under the Commissioners, and that the association of which he is honorary secretary has no connexion with the Insurance Commissioners. Dr. Balfour Graham also communicated with the Joint Committee of Insurance Commissioners in London, and the secretary of the committee replied in the following telegram: "Dr. Knight has no connexion, official or otherwise, with the Insurance Commissioners."

Bequests by Lord Lister to Edinburgh University.

At a meeting of the senators of the University of Edinburgh held last week it was intimated that the late Lord Lister had bequeathed to the university the Insignia of the Prussian Ordre pour le Mérite and of the English Order of Merit, the medals received since his studentship from the Royal Society and other learned bodies, diplomas, etc., conferred by scientific bodies, and various honorary gifts and distinctions, including the caskets containing the freedom of the Cities of London, Edinburgh, and Glasgow, and of the Merchant Taylors' Company, the trowel presented to him when opening the new nurses' home at Montreal, together with his portrait in oils. The court resolved to record their high appreciation of his lordship's bequest as a testimony of his affection for the university and city in which he began his professional career, and of his having chosen the University of Edinburgh as the depository of these memorials of his fame and of his place in history as one of the great benefactors of mankind.

Glasgow Hospital Sunday Fund.

At the eighteenth annual meeting held last week the secretary and treasurer reported that, though the number of churches and Sabbath schools contributing to the fund was slightly smaller than in the preceding year, the total income—£4,759—showed an increase of a few pounds. Of this sum, £4,550 was set aside for the infirmaries, and, as in previous years, was allocated in proportion to the number of fully occupied beds in each infirmary. The Royal Infirmary, with 618.3 beds, accordingly received £2,015 8s. 8d.; the Western Infirmary (529.55 beds), £1,726 3s. 6d., and the Victoria Infirmary (248 beds), £808 7s. 10d. The ordinary income of each of these hospitals fails to keep pace with their increasing expenditure, and the excess of ordinary expenditure over ordinary income was in the case of the Royal Infirmary, £17,709; the Western Infirmary, £15,594; and the Victoria Infirmary, £6,071. As the Hospital Sunday Fund fluctuates somewhat from year to year, it was suggested that a capital fund be established by legacies and donations. In moving the adoption of the report, the chairman, Sir James Bell, who originated the fund in 1894, pointed out that, in view of the disturbing circumstances attending the introduction of the Insurance Act, the increase in the contributions of the general public was very gratifying. A great deal had been said about the future of hospitals under the Act; but it was certain that, though the Act might vary the incidence of payments, the great general hospitals would still have to bear the brunt of the sickness which was constantly existing in a great community like Glasgow. Money had to be obtained, and an excellent way was through the church plates of the various Christian bodies of the community.

Honorary Degrees at Glasgow.

The University of Glasgow has resolved to confer the degree of LL.D. upon Sir Hector C. Cameron, M.D., Emeritus Professor of Clinical Surgery in the University and formerly Assessor of the Senate on the University Court, and Dr. Donald J. Mackintosh, M.V.O., Medical Superintendent of the Western Infirmary, Glasgow. The degrees will be conferred on June 23rd.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Irish Census Returns.

In May last a general summary of the new census returns for Ireland was published by the Registrar-General and the Census Commissioners. More specific details for each county are now in course of issue. The first report, which has just been published, includes returns from Wicklow, Cavan, Leitrim, and Clare—that is, one county from each of the four provinces. In all of the four counties there has been a decrease of the population since the census of 1901. In Wicklow the decrease, 113, is very small; in the other three it is considerable—6,368 in Cavan, 5,761 in Leitrim, and 8,102 in Clare. But, in view of the fact that the total decrease in the population during the decade is the smallest on record since the census was instituted, these figures are not so bad as they appear at first sight, and bear out the belief that the decline in population has been checked to a remarkable extent. Only one county, Wicklow, shows an increase in the total number of emigrants for the decade, and here it is little more than 100. In Cavan the decrease is nearly 3,000, in Leitrim the figures have declined by 1,500, and in Clare there were between 4,000 and 5,000 fewer emigrants. In all the counties the number of persons receiving Poor Law relief has diminished during the decade by 300 in Wicklow, nearly 600 in Cavan, while in Leitrim and Clare the number is almost halved.

ANTIVIVISECTION SOCIETY.

The annual meeting of the Irish branch of the National Antivivisection Society was held last week in Dublin. The report for the year stated that £143 3s. 11d. had been collected, and that there were now four divisions of the Irish branch.

The Chairman stated that he could not approve of doing evil that good might come, and since pain was an evil he considered that the inflicting of it, except for curative purposes, was unjustifiable. Dr. Charles Reinhardt said that on the Royal Commission upon Vivisection there was a preponderance of members in favour of vivisection, and that many antivivisectors objected at the outset to the constitution of the Commission. He said that after careful consideration of the recently issued report he had come to the conclusion that on the whole it was much more satisfactory to antivivisectors than was to have been expected. In considering the antivivisection movement, Dr. Reinhardt spoke of the question of affinity between ourselves and the lower animals. It had been found that our bodies were composed of individual cells that were identical with those of the bodies of the lower animals. Each of these cells was capable of a certain amount of rudimentary brain power. It could feel and remember. It could react to an injury, and had the power to avoid a subsequent injury of the same kind. There was then an affinity between us and the lower animals which forbade us to make use of them for some mere speculative gain to man. In the inoculation method there was a fallacy. Health was a positive force. The vivisectionist believed that he was going to find a specific for disease. But his belief was not within the bounds of probability. Disease was the hand of Nature pointing to us some breach of her laws. If a specific were found for a disease, the consequence could not be removed without also removing the cause. Even if a specific could be discovered for that dread disease of cancer, he thought it would be an unmitigated misfortune to the race. Whatever was the cause of cancer, it was disobedience to Nature's law, and if a specific was found which would destroy individual cancer, and the cause of cancer remained unknown, then sooner or later the vigour and health of the whole human race would be undermined and vitiated.

RESEARCH DEFENCE SOCIETY.

A drawing-room meeting, under the auspices of the Ladies' Committee of the Dublin branch of the Research Defence Society, was held last week in Dublin. Professor Campbell Geddes, Professor of Anatomy in the Royal College of Surgeons in Ireland, delivered an address entitled, "Why Experiments on Animals are Necessary," to a large audience.

ROYAL VICTORIA HOSPITAL, BELFAST.

Owing to the retirement of Dr. J. Walton Browne, senior surgeon, owing to the age limit, Professor Sinclair, F.R.C.S.Eng., becomes senior surgeon, and Mr. Robert Campbell, F.R.C.S.Eng., who has been assistant surgeon and surgeon to the out-patients for twelve years, on March 21st was appointed to the vacant full-visiting surgeonship; and Mr. Howard Stevenson, F.R.C.S.I., was appointed to the vacant assistant surgeonship. Mr. Stevenson, who served with distinction as surgical registrar and surgical tutor, and also holds the post of surgeon to the Ulster Hospital for Children and Women, comes well qualified and experienced for the larger sphere. He is heartily welcomed by his new colleagues.

PHYSICIAN TO THE KING IN IRELAND.

The King has been pleased to appoint Sir John William Moore, to be one of the Honorary Physicians-in-Ordinary to his Majesty in Ireland, in room of Sir Francis Richard Cruise, deceased.

DUBLIN HOSPITAL SUNDAY FUND.

The thirty-eighth annual report of the council, which was read at the meeting of the Dublin Hospital Sunday Fund last week, stated that collections were made on November 12th, 1911, in 280 places of worship; ten congregations which had collections in 1910 did not have them in 1911, but on the other hand eight new congregations sent in collections. The amount contributed to the fund in 1911 was £3,454 6s. 9d., being an increase of £113 9s. as compared with 1910. The Hospital Football Match, played on January 13th, 1912, realized the sum of £100 for the benefit of the Fund. The expenses amounted to 6.61 per cent. of the total sum collected. Sir John Moore, in proposing the adoption of the report and statement of accounts, said that he believed the Fund had been of the greatest use to the hospitals, and had led to improvement in every direction as regarded the management of the institutions. Regret was expressed that the Roman Catholics had not seen their way, so far, to advocate this cause in their churches, though three-quarters of those whom the Fund relieved were of their denomination.

IRISH NURSES' ASSOCIATION.

At the annual meeting of the Irish Nurses' Association, held last week in Dublin, the National Insurance Act was discussed, and one of the instructors addressed the meeting. It was decided to hold another meeting early in April to arrange what steps should be taken towards forming a friendly society for nurses. This meeting will probably be held on April 6th.

Special Correspondence.

PARIS.

Intramuscular Injections of Mercury in Puerperal Septicaemia.—Haemolytic Properties of Splenic Extract.—After-effects of Salvarsan on the Auditory Nerve.

M. SOULIGOUX read an interesting paper at a recent meeting of the Paris Surgical Society on the value of intramuscular injections of mercury cyanide in septicaemia, especially puerperal septicaemia. His experience with collargol, electrargol, and other drugs was unsatisfactory, and in preference he employed the following solution with good result: Mercury cyanide 0.01 gram, stovaine 0.01 gram, distilled water 1 c.cm. Seven such injections are given, one each day for a week, and the patient is kept at rest in bed and ice is applied to the abdomen. Should symptoms of mercurial poisoning appear the mercury is stopped and injections of normal saline solution given instead. The number of patients thus treated was 148. Death occurred within forty-eight hours and before treatment could have had effect in 4 cases, and 3 patients died in spite of treatment; the remaining 141 patients recovered.

Considerable attention has been given lately to some research work carried on in various laboratories in Paris on the haemolytic properties of the extract of the spleen. Dr. Chabroll reported experiments from which he drew the conclusion that the fresh extract has special haemolytic properties; but Dr. Charles Foix, on the other hand, finds that fresh extract of dog's spleen is inactive towards the red corpuscles of the dog. After forty-eight hours slight haemolysis was produced when proper precautions were not taken, but this was not a true haemolysis, as it was unaffected by heating at 55° C. and by addition of complement. Moreover, the solution became markedly acid and contained many microbes. Aseptic extracts were then prepared, and with them no haemolysis occurred after three days.

At a recent meeting of the Medical Society of the Hospitals Dr. Milian read a paper on the after-effects of salvarsan on the auditory nerve. He stated that specific affections of the ear were cured in several instances, but that in his observations of 1,200 cases treated with salvarsan 7 cases showed symptoms of deafness, usually unilateral, sometimes accompanied by vertigo and ringing in the ears. This condition came on about twenty-four to thirty-six hours after the injection, and lasted for five or six days. The above phenomena were probably due to toxic causes, but might be merely the result of congestion of the internal and middle ear.

VIENNA.

Medical Statistics in Austria.—Yearly Expenditure of the Board of Health.—A Generous Gift.

THE official record of the number and distribution of doctors in Austria last year has now been issued, and from it we learn that at the end of 1911 there were 13,264 doctors of medicine on the register in this country. In

other words, these figures represent an increase of sixty-two (0.47 per cent.) in the total number of names on the register as compared with the number entered in 1910, whilst the increase in previous years has never been nearly so high. The considerable increase is explained by the fact that during the last six years the number of medical students in Austrian universities has actually doubled itself, and it may safely be predicted that the output of doctors during the next decade will be twice as large as the demand caused by the increase in the population and the gaps made by death in the medical ranks. Last year the proportion of doctors throughout the whole empire was 4.60 for every 10,000 inhabitants; and it may be remarked in passing that whilst there is a dearth of practitioners in the country districts, where their numbers have sunk some 3 per cent., the towns, on the contrary, are overcrowded with medical men. Graz, Lemberg, and Cracow are particularly rich in doctors, whose numbers have increased from 5 per cent. to 9 per cent. during the last year, and Vienna and Prague are in the same condition. In Vienna there are 14.9 qualified doctors for every 10,000 inhabitants, whilst in Prague there are 17, Graz 19.7, Lemberg 19, Cracow 21.6, Innsbruck 24, and Olmütz 27. It is interesting to note a corresponding increase in the number of medical women, of whom there are from 100 to 200 more than in the preceding year, and who now form 7½ per cent. of the total number of registered medical practitioners in this country. There is also an increase of 4.6 per cent. in the number of specialists. The growing popularity of this particular form of practice is proved by the fact that out of the total number of doctors in Austria only 34 per cent. are general practitioners; 28 per cent. are on the staffs of hospitals (as professors, assistants, etc.), and the remaining 38 per cent. are specialists. It is only fair to add, however, that many of the so-called "specialists in the diseases of women and children" (a favourite combination amongst Austrian doctors) do a fair amount of general practice in addition to their specializing, so that the proportion of real specialists is not so alarmingly high as might be supposed from the above figures. Nevertheless, the city of Vienna alone possesses nearly fifty otologists and rhinologists; and specialists abound even in the smaller towns in consequence of the rapid increase in the number of new hospitals which are being erected all over the country.

The expenditure for the preservation of the public health during the coming year has been reckoned by the Ministry of the Interior to amount to 4,200,000 kronen, or about £200,000. There are in all 494 medical officers of health under the Ministry, their distribution depending upon the density of population and the industrial importance of the different districts; and the salaries of these officials alone amount to two million kronen (about £90,000). With regard to the various establishments kept up for the maintenance of the national health, the two institutes for the manufacture of cow's lymph cost 70,000 kronen a year, the serotherapeutic institute costs 186,000 kronen, and the seven institutes for the examination of foodstuffs together require some 350,000 kronen. Moreover, a sum of 1,600,000 kronen (£70,000) is to be devoted to the prevention of infections, pandemics and epidemics, particularly malaria, pellagra, and tuberculosis. This sum is 25 per cent. higher than last year's outlay, as the Ministry is anxious not to be hampered in its work in this direction. The chief point of interest in the eyes of the profession, however, is the constant lack of duly qualified medical men to fill the posts of medical officers of health. This is hardly surprising, as the pay is not very high, and the work is extremely arduous, so that under present conditions even private practice offers better chances. The only possible means of attracting a sufficiency of properly qualified men into the service is to increase the rate of pay, and at present this is a measure to which the Government will not consent.

The constant complaints concerning the lack of hospital beds for children has led to a grant of three million kronen (£150,000) being bestowed upon the Jewish community in Vienna. This handsome legacy is the gift of Herr von Gutmann, who wishes it to be devoted to the building of a hospital for children of all creeds. The proposed establishment is to contain 150 beds, and will be supported partly by Herr von Gutmann's grant and partly by other already existing funds.

Correspondence.

THE PHYSICIAN AND PATHOLOGIST ON HEART FAILURE.

SIR,—There are two very interesting and instructive addresses in your last issue on the above subject by Sir Clifford Allbutt and Dr. W. Russell. In studying the question of heart failure Sir Clifford Allbutt might have left the pathologist out of account and have assumed the rôle of physiologist with advantage. He might thus have got a little closer to the solution of the problem which he has tried to elucidate. It is true that he has referred to the work of Gaskell, Fletcher, and Barcroft; but even now there is admirable work, whether known to Sir Clifford Allbutt or not, going on at Cambridge on somewhat similar lines by George Ralph Mines.[1] This work will help to get rid of those vague and nebulous hypotheses about contraction stimulus to which we have been treated of recent years, and the nature of which has never even been hinted at by those gentlemen who have advanced such views. No doubt a diseased heart will succumb much more readily than a sound one, but it is very fortunate that even a diseased heart will stand a good deal of tinkering.

Sir Clifford Allbutt thinks that sphygmomanometrical observations are of no use in the detection of myocardial disease, but "a test of blood velocity, which is probably always reduced, would be more trustworthy." He does not tell us how the velocity is to be measured, nor whether he refers to the velocity in the arteries, capillaries, or veins. So long ago as 1883 I showed the varying effects of pressure and velocity. In my Toronto address in 1906[2] I showed that capillary and venous velocities could be measured, and how the arterial velocity could be fairly accurately estimated from the fall in the pressure gradient. This involves accurate measurements of the systolic and diastolic pressures. If Dr. Russell be correct in his estimates as to the great pressure which is required to obliterate a thickened or sclerosed artery, then due allowance must be made for such resistance in calculating the pressure gradient. In cases of arterio-sclerosis there should be no great difficulty, as Dr. Russell seems to find it easy to overcome hypertonus by the use of erythrol-tetranitrate. In cases of atheroma of the brachial artery, if you use a very wide cuff there surely should be some healthy portions of the artery that would not be bridged over and which would not offer much resistance to pressure.—I am, etc.,

Liverpool, March 25th. JAMES BARR.

SIR,—Many who were present at St. George's Hospital when Sir Clifford Allbutt gave his exhaustive and interesting address on the above subject, which appears in your issue of March 23rd, must have remembered that they were assembled near the spot on which John Hunter, leaving a meeting held in the hospital in some excitement, knowing the injurious influence exercised by such emotion in provoking his attacks of angina, succumbed to heart failure.

Fully as Sir Clifford Allbutt dealt with the question of neural influence in such conditions, in an aside which he uttered and which does not occur in the published address, he remarked, with apparent approval on the part of the meeting, that the question of a neural or muscular origin of cardiac motion was an "academic question," that is, curious rather than important.

I am glad I was not especially called upon by the chairman to join in the debate, fully appreciating as I did the difficulty of saying anything particularly illuminating on the subject which was not more or less of common knowledge. Had I spoken, however, I should respectfully have taken exception to Sir Clifford Allbutt's estimate of the importance of the question of the essential nature of cardiac movement.

The functional unit, I am prepared to admit, is complex, if I may, without apparent contradiction, speak of the complexity of a unit. It consists in that expression of force

[1] The Relation of the Heart-beat to Electrolytes and its Bearing on Comparative Physiology, *Journal of the Marine Biological Association*, October, 1911.

[2] The Circulation Viewed from the Periphery, BRITISH MEDICAL JOURNAL, 1906, vol. ii, p. 401.

which results from the combined action of a specific cell and its relation to innervation and blood supply. The effect of discord in this complex unity may be sudden or gradual. John Hunter, still young in mental power but elderly in years, and old as regards the heart itself, with its calcified coronaries and liability to angina under circumstances demanding sudden adaptation to effort or emotion, died suddenly of heart failure. The relation here between the neural demand for organic adaptation and the muscular failure is manifest. The cause of death was the failure of the specific cell to respond to the demand for increased action. It was, in all probability, in this case the pace that killed.

But, without such emotion, demand on the specific cell in excess of adaptability may be equally fatal and as suddenly so. Had Hunter been walking up a hill or lifting a weight in an effort exceeding the adaptability of the cardiac muscle cell to the demand made, the effect would have been the same. Had he been sitting still or lying in bed, and from some variation in blood distribution a momentary demand for adaptation to increased effort had been made upon that perpetual weight-lifter the heart, death might have been equally sudden.

But apparently healthy and younger muscle, as in the runner and swimmer, may fail in adapting itself to demand and the last straw, added by a momentary failure to distribute the weight in the circulation, may close the scene with tragic suddenness, such failure to distribute being due to a breakdown in vasomotor adaptability.

I shall not occupy your valuable space by dwelling upon the depressant influence on the nervous system and the specific cell of toxaemic conditions of blood. The pneumonic, the fevered, the exhausted, and the drugged die poisoned, under circumstances in which demand beyond adaptability is made on the specific cell. But increasing demand may be progressive and gradual, and failure likewise gradual and progressive, when the slowly manifested evidence of such failure in dilatation and stagnation become apparent. The failure of the specific cell—of the instrument—which is only one of the factors in the functional unit, must be due to defect in its nutriment or innervation. The uninnervated functioning of a specific cell, which is sometimes imagined and preached is as unthinkable as the existence of such a cell without blood supply, His's embryonic chick notwithstanding.

Whatever functions be assigned to a specific cell, whether it be the production of a digestive ferment, the excretion of waste, or the contraction of muscle, it is conditioned in the exercise of such function by the state of the other factors in the functional unit.

It is by the recognition of the complexity of this unit, of which the neural element is so important a factor, that I would suggest we are likely to attain to more satisfactory views of the nature and cause of heart failure, to a rational management of the condition when threatened, and to an explanation of some apparent contradictions in the pathological findings.—I am, etc.,

London, W., March 25th. ALEXANDER MORISON, M.D.

SIR,—In your last issue Sir Clifford Allbutt publishes an address on the Physician and Pathologist on Heart Failure. It is indeed a dark picture which he paints, steeped in melancholy tones. Let any reader peruse his article and admit the statements that it contains, and he will lay down this number of the JOURNAL with the sad conviction not only that prognosis in heart affections is impossible, but that any endeavour to disperse the gathered clouds is foredoomed, and that the source of heart failure will remain unknown.

The two chief schools have failed. To the questions of Sir Clifford morbid anatomists return him no answer, and those who employ the timeworn methods of percussion and auscultation are equally silent. "If, then," says Sir Clifford, "the delineations of the heart's dimensions which we obtain by percussion . . . give us no constant or trustworthy criterion, what of auscultation? Well, we are but little better off." But there is a third school of the clinicians who attempt a closer study of the morbid physiology of the *living* heart.

What is heart failure but perverted or submerged function? And how can we ever hope to solve the riddles of Sir Clifford till we are prepared to study, and study on a large scale, the action of the moving organ which one day is to cease beating? I earnestly declare my conviction that the chief problems of heart failure will be solved, nay, are being solved, by this method, and that the time is present, not to recount the failures, but the successes of those graphic investigations which form a part of it.

On the list of failures which Sir Clifford cites are examples which have no right there. Speaking of the morbid anatomist he says, "or if we show him another heart in which, by the poison of rheumatic fever, the tract of Tawara was eaten away, and yet, notwithstanding, there was during life no dissociation of auricle and ventricle. . . ." Did such a case ever occur? If so, I do not know of it. And again, "many cases are published (by Reinecke and others) in which, under what seemed to be complete demolition of the bundle, there was during life no dissociation." I challenge this statement without reserve, and affirm that in no case has discontinuity of the bundle been proved in published reports, where conduction was shown to exist within a reasonable time of death.

Further, Sir Clifford Allbutt speaks of arrhythmias "pertaining to the extrasystolic kind," and cites a group in which they may be harmless, but later he speaks as follows: "The symptom group of every such case must, of course, be sifted carefully, for, on the other hand, in pneumonia or diphtheria a dropped beat may be the first presage of heart failure." True, but the "dropped beat" of acute affections is usually due to a different phenomenon, namely, heart-block, and the recognition of this cannot be accomplished by sifting the symptoms, whereas it is at once accomplished, and with certainty, by graphic methods.

Who cares for the authority of Leyden, Bäumler, or Ebstein, to whom the differentiation of the simplest irregularities was unknown, when they state "that in the pulse we have no guide to myocardial damage"? Indeed, their very statement is now false. Who cares whether in any instance a lesion can be found to account for an irregularity? The irregularity itself is evidence that the cardiac muscle has suffered functional change. It must be fairly analysed, and this analysis can now be made. Heart-block, extrasystoles, auricular fibrillation, pulsus alternans, etc., can be identified with certainty, and their pathological significance will soon be fully known if the analysis is made in all cases of irregularity. It will not be known if Sir Clifford's views prevail and deter such investigation.

I come to a crucial question, one for which Sir Clifford seeks a reply: To what can we ascribe sudden death in a heart patient, in whom recovery has been generally expected? He has no answer which satisfies. The methods of the new school are young, but I venture to predict that if that question is again asked in a few years only, the new school will be ready with its answer. And that answer is contained in Sir Clifford's own writing: "Fibrillation of the ventricle may be one of the modes of sudden death, but it is hardly consistent with survival." Graphic methods have isolated three stages of perverted auricular action—the production of extrasystoles, of paroxysmal tachycardia, and fibrillation; they have isolated the two first stages of the same process in the ventricle, and the third, being incompatible with life, has not been caught; yet precisely those patients in whom the third stage is expected fall dead, when to the old school such death is least anticipated. We know that ventricular fibrillation terminates many experiments in animals; death has so far hidden its demonstration in man, but the danger signs which give warning of its imminence may be seen; closer study, wider study by more workers, is needed to ascertain their exact value.

Sir Clifford Allbutt has done great service to English medicine in the long course of his distinguished career. Disparagement of new methods at this stage of their development may cripple them. The new school requires additional and active members; it asks the sympathy and support, not only of Sir Clifford, but of all leaders of English medicine.—I am, etc.,

Cardiographic Department, University College Hospital, March 24th. THOMAS LEWIS.

LEPROSY IN THE UNITED KINGDOM.

SIR,—In the letter signed by Dr. H. Bayon there are inadvertencies, to which I must ask you to allow me to direct attention. Dr. Bayon is advocating the desirability

of a compulsory registration of lepers in England, and in doing this he attempts to confute the statement which has been made that no instances have been verified during a long period of any cases as originating in England. In order to prove his point he quotes cases, and apparently takes for granted that the expression "England" includes the whole United Kingdom. Now, it is no mere quibble to remind him that this is far from being the case. It is well known—and I have myself mentioned it many a time—that one or more cases of quasi-indigenous origin have occurred in Ireland and in the North of Scotland. It is a fact that it was in these districts that leprosy, as regards the United Kingdom, lingered latest, and it is one of the arguments by which my belief that leprosy is merely a dietetic modification of tuberculosis is supported.

Dr. Bayon mentions cases (exceedingly few) as originating in Ireland and in the Shetland Islands, whilst he gives but one as originating in England itself. The subject of the last case had resided all his life in England, but both his parents, who were also lepers, had lived in Poland, and were supposed to have acquired the disease there. Their son's malady was therefore quite as likely to have been the result of inheritance as of contagion, and there is no hint that the disease spread further. On the whole, then, I think I am entitled to say that Dr. Bayon's cited facts support the conclusion that no proven cases of leprosy have originated in England within recent years.

My assertion as regards sporadic cases of leprosy is that they may originate and may be followed by others of apparent contagion wherever the conditions render likely the consumption of ill-cured fish. These conditions occur wherever fish is remarkably abundant whilst other forms of animal food are scarce or dear, good salt deficient, or the religious usages of the district more or less discourage the employment of other forms of animal food. It is under one or other of these heads that I seek to explain the very rare cases which yet occur in Ireland, in Switzerland, and other places where we still occasionally hear of it.

The fact that in none of these places do these sporadic cases—although, as a rule, for long undiagnosed and unsuspected from the beginning—form the centre of any leprosy epidemic is, I think, an emphatic disproof of the theory of contagion.

We have always plenty of cases in England as well as in the rest of the United Kingdom which might easily prove centres for an outbreak of leprosy, and the fact that they never do so is, I think, an emphatic refutation of the contagion hypothesis and the asserted desirability either of compulsory registration or of the institution of asylums for segregation.

If, as I contend, neither isolation nor registration are necessary, it is not difficult to see that they are unjust, and, in the case of leprosy, cruel. The word "leprosy" carries with it, in the popular imagination, such a frightful amount of exaggeration that it is much to be desired that it should be entirely disused; and the facts, if viewed in a common-sense way, would, I am sure, thoroughly justify this being done. It is unwise to attempt to base important practical conclusions upon facts which are, at best, very few in number and most of them somewhat doubtful.—I am, etc.,

Haslemere, March 23rd. JONATHAN HUTCHINSON.

SIR,—Dr. Bayon has done me the honour to quote from an article of mine on "Leprosy," and to mention a case in which I am interested, which is now under the care of Dr. Woodyatt at the Whitechapel Infirmary. He does not, however, inform you that the two cases alluded to are practically the only ones undoubtedly known during the last forty years in which there is authentic evidence of the disease having manifested itself in a subject who has not spent some time in a country where leprosy is endemic. Any one who has made himself acquainted with the facts concerning the disease in Great Britain and Ireland must be aware that although we have always with us a certain number of lepers—probably, at any one period, not less than fifty—we can find no evidence of any actual spread of the disease. As far as I have been able to discover, all the patients have either been colonists or have spent some time in a leprous country—that is, they have contracted leprosy abroad; and in the large majority of the cases—since their arrival in this country—no precautions whatever have been taken as regards contagion to others. If leprosy were the actively infectious malady that it is in the popular mind—and apparently in the minds of some of our medical officers of health—we should surely meet, occasionally at any rate, with some "indigenous" cases—some instances, in fact, where persons who have never been out of the country, but who may have been associated with an imported leper, have contracted the disease; but as a matter of fact, if we exclude the above two exceptional cases, we can, so far, find no valid evidence of anything of the kind.

I cannot, indeed, agree with Dr. Bayon that "the St. Pancras Borough Council were justified in passing the resolution they did." However advisable and necessary stringent measures, notification, etc., may be in places where leprosy is endemic or where it shows signs of spreading, such measures, in the interest of the public health, are not at present called for in this country. It might certainly be useful to a keen pathologist to know where the cases are, and where material could be obtained for further study, but with reference to the idea that the stray leper in this country is a serious source of danger to others, notification is quite unnecessary. As I have remarked elsewhere:

> When the carriers of such easily communicable diseases as tuberculosis and syphilis are allowed to go freely about and to engage in any or every occupation, it would appear, to say the least, somewhat redundant to unnecessarily penalize the poor sufferers who are afflicted with leprosy. The official stamp of danger which notification would imply would doubtless further enhance the popular fear of its contagion, and render the burden of the unfortunate leper still more hard to bear.

—I am, etc.,

London, W., March 25th. PHIN. S. ABRAHAM.

KALA-AZAR.

SIR,—I see in the JOURNAL of February 17th, on page 386, a small paragraph that Surgeon-General Bannermann, of Madras, has cabled to Sir R. Ross, of Liverpool, of Captain Patton's discovery of the complete development of the parasite of kala-azar in Indian and European bed-bugs. This discovery seems to harmonize with the observations of Wenyon[1] and of Franchini,[2] and is practically the same thing as obtaining developmental forms of the parasite in a haemoglobin-containing medium found in the digestive tract of blood-sucking insects who retain the blood (sucked) for several days. In other words, the culture takes place in a living tube, just as one can show this taking place in a test tube containing haemoglobin solution, even extraneous contamination within certain limits being no bar. The developmental forms of both *Leishmania tropica* and *Leishmania donovani*, as they take place *in vitro*, were demonstrated by me[3] on January 4th at a meeting of the Bombay Branch of the British Medical Association, in their complete cycle—namely, from ⊙ body to flagellate and from the flagellate back to ⊙ body. However interesting the parallelism of development of these parasites, whether in the bug, mosquito, or in glass test tube, may be, the important point in the study of the etiology of the diseases produced by these parasites is whether it is possible transmit the disease in susceptible animals with the aid of the ⊙ bodies obtained from the flagellates. Let us hope this will soon be demonstrated, and the real culprit caught and condemned.—I am, etc.,

Bombay, March 2nd. R. ROW.

PROGNOSIS IN CASES OF CHRONIC ARTHRITIS

SIR,—Many of us will have read with much interest and pleasure the excellent address by Dr. Fred. Gardner on prognosis, published in the JOURNAL of February 10th, and probably most of us would endorse his opinion that "optimism in prognosis is not only our pleasant privilege, but our bounden duty." Will you allow me to emphasize this in one large group of cases, and to put in a word of warning against a wrong form of optimism under certain conditions that I have become familiar with?

As regards the first, is there not in the profession generally too much pessimism in the prognosis given in

[1] Wenyon, *Parasitology*, October, 1911, vol. iv, No. 3.
[2] G. Franchini, *Lancet*, November, 1911; and *Malaria e Mal. di paesi Caldi*, Roma, 1911, ii, 235.
[3] R. Row, paper read before the Bombay Branch of the British Medical Association, January, 1912, and published in this issue of the JOURNAL (p. 717).

that large group of cases at present grouped under the term "rheumatold arthritis"? It is an almost daily experience during the summer months for me to see a patient with some form of chronic arthritis, and to be told at the very beginning of our interview, "I know that I can't get well, but I don't want to get worse if I can help it." The more doctors these unfortunate people have seen the more hopeless they are, and there must be many thousands of these people who, after making intermittent attempts to get well, have given up even these attempts in despair, and are content to remain more or less crippled and incapacitated for work or pleasure, seeking only relief from one symptom—pain. There is no doubt, I fear, that the hopeless prognosis has come too often from the doctor. If it were arrived at after long and sustained efforts (1) to ascertain the causes of the arthritis and (2) to remove these causes had proved unavailing, one might not seriously quarrel with the pessimism of doctor and patient. But in a large number of cases the hopeless prognosis has been pronounced almost as soon as the patient first consulted the doctor, and only half-hearted and intermittent attempts have been made to get permanent improvement. The bad prognosis, by destroying hope and paralysing sustained effort, has brought about its own fulfilment. The battle is lost because no really vigorous attempt is made to win it. Factors such as local sepsis, especially oral sepsis: morbid conditions of stomach and bowel, imperfect elimination of waste products, faulty habits, defective oxidation due to imperfectly ventilated rooms, faulty environment, etc., are allowed to continue, or only one or other of these factors is removed, and the whole energy of doctor and patient is concentrated on getting relief from pain. No sustained attempt is made to remove the causes of the complaint.

The reason for this is, I am sure, in many cases, hopeless views prevalent with regard to many chronic diseases, and especially regarding the various forms of arthritis. The only chance one has of obtaining a cure is to get the patient to make a sustained effort for a considerable time, correcting all faulty habits, learning new and good ones, and maintaining the latter not for a few weeks, but permanently. How can one induce a patient to do this unless one is hopeful, and able to inspire the patient with hope, and sustain that hope in and through the bad days that are sure to come and to recur again and again? Of course, I am assuming that the doctor is doing his part, and has taken the trouble to go over the case thoroughly so as first to ascertain, and then remove, *all* the factors which have led to the chronic morbid condition. If this is not done a good prognosis is not justified—in fact, it is almost cruel; but if it is done, a hopeful prognosis is surely "a pleasant privilege, and our bounden duty."

Now for the second point. Both at home and in Egypt I have come across a fair number of people with chronic arthritis, or so-called rheumatism, who have been sent away from England and told that if they came to Egypt for the winter they would probably get well. They are told that warm dry air is all they want. In the warm air and sunshine—no doubt absence from work and worry, and the exhilaration of fresh interesting surroundings help—they feel and seem better; especially pain is lessened. They spend some weeks or months here relying simply on the climate, and then return home to find themselves in a month or two not a bit better than they were before leaving England. The good prognosis is cruel in this case because it is unjustified. There can be no doubt that sunlight, sun warmth, and fresh dryish air in the winter months are most desirable for many forms of arthritis; but these alone will not produce a cure, and to send people to Egypt with, say, oral sepsis, bacilluria, chronic intestinal catarrh, and with faulty habits of eating and drinking, and to let them think that without changing their habits and conditions they can be cured by climate only, is cruel to the patient and injurious to the reputation not merely of the individual doctor, but of the profession.

What one says of Egypt applies to other health resorts. Climate, in the vast majority of cases of chronic disease, is only one factor for good, even though it is a large factor, and a patient should not be led by careless language to think otherwise.—I am, etc.,

Helouan, Egypt, Feb. 17th. R. ACKERLEY.

THE STUDY OF CONDUCT.

SIR,—Let me hasten to assure Dr. Newington that I bear him no grudge for intervening in this discussion. Quite the contrary; any one who does me the service of treading on the tail of my coat earns my unfeigned gratitude.

For the rest, I am rather puzzled to know what are now our differences, and on what points Dr. Newington requires enlightenment from me. He quotes from my books certain statements to the effect that conduct is founded on mental states and mental processes, and he asks how, if these statements are true, mental process can be eliminated from the study of conduct. It seems to me easy enough. The running of trains is founded on the expansion of steam, but I see no difficulty in studying the times, the punctuality, the routes, the service of trains, without making any reference to the expansion of steam. The movements of troops depend on reasons that commend themselves to the War Office; but the daily papers have no difficulty in describing the movements of troops without reference to these reasons. To give an illustration more germane to the matter, it may be that the inability of my friends to appreciate the distinction between mind and conduct provokes in me such unseemly hilarity that I am constrained to recover my sobriety by taking the train to Peebles on the first wet Sunday, and there reading the Lamentations of Jeremiah. In order to make this journey I must first come to a decision or determination to do so, and in coming to this decision I am influenced by certain reasons. The reasoning and the determination are mental facts: they pertain to the province of psychology. But making the journey, looking up the time-tables, going to the station, taking my ticket, boarding the train, getting out at my destination—these are facts, not of mind, but of conduct. They belong, not to psychology, but to praxiology. They are determined, no doubt, by mental processes, but they are not themselves mental processes: they are bodily acts; and I see no more difficulty in studying the act apart from the motive that prompts it than I see in studying the cart apart from the horse that draws it.

Dr. Newington objects, if I understand him aright, that it is impossible or useless to study conduct systematically, because conduct is dependent on mind, and if we study mind that is sufficient. We have then to all intents and purposes, studied conduct. My answer to this is that we cannot study the minds of others at all except through the medium of their conduct. No one can see or hear what is passing in the mind of some one else. We can know, or rather we can guess, what is passing in the minds of others by no possible means except by watching what they do and listening to what they say—in other words, by their conduct. The current notion is that we are to judge a person's sanity or insanity by the state of his mind, and it is forgotten that the state of his mind cannot be known or conjectured except from his conduct. I say that we can judge of insanity by conduct alone without going behind conduct to the state of mind that prompts it. I say that there are heaps of disorders of mind that are compatible with sanity, and do, in fact, exist in sane persons—in persons who are adjudged to be sane because, in spite of the disorder of their minds, they exhibit no disorder of conduct. I say that we can, and do, and ought to judge of insanity not by what people think or feel, but by what we see them do and by what we hear them say.

Of course I shall be told, with that delightful inconsequence that distinguishes the alienist physician, that I deny there is any disorder of mind in insanity, or any need on the part of the alienist to study mind or its disorders. To this I reply that I was the first to point out to alienists the importance of studying normal psychology; and I was the first alienist to write a book on psychology specially adapted to the purpose and needs of the alienist. But I maintain that the systematic study of the normal and morbid mind does not relieve us from the duty of studying systematically normal as well as morbid conduct; that the two subjects are distinct and different, as any one may satisfy himself by comparing my book on *Psychology* with my book on *Conduct;* and that, of the two, the study of conduct is the primary, the more immediately and pressingly important, to the student of insanity.

Dr. Newington discovers that the cat is out of the bag; that is, that I hold that insanity is primarily a disorder,

not of mind, but of conduct. The animal has, in fact, been at large and clamouring for recognition for more than twenty years, but my colleagues have only just, it appears, become aware of his existence. They now, at last, "well know that conduct must be studied," but they "did object to the study of conduct as set up by Dr. Mercier." Dr. Newington means, of course, that they objected to the study of conduct as they supposed I was going to set it up; for they never gave me the opportunity of explaining my views. My proposal was not seconded, was not discussed, was not explained. It was damned at a venture. I hope I am not uncharitable, but I cannot help surmising that Dr. Newington's belated conversion to the importance of studying conduct is not altogether unconnected with the facts, that the publication of my book shows that the study is practicable, and that the adoption of the subject by the College of Physicians shows that it is respectable. I surmise that Dr. Newington, when he says he is slightly aggrieved, really means that he is a little ashamed of the obscurantist attitude of the Medico-Psychological Association, and is trying to explain away its opposition. It is odd that for twenty years I have been the voice of one crying in the wilderness, and now it appears that I am preaching to the converted. However, *litera scripta manet*. The doctrine is recorded in my *Sanity and Insanity*, published twenty-two years ago. The refusal of the Education Committee to entertain the doctrine is recorded on its minutes. The syllabus that the Committee adopted remains on record. The debate at the Association remains on record. Them there facts is stubborn things. We may now, I trust, place on record one thing more—that we are all agreed that the systematic study of conduct is both practicable and desirable; and I have no doubt whatever that, in another twenty years or so, we shall all regard it as a truism that insanity is a disorder, primarily, not of mind, but of conduct; and we shall all deny that we ever held any other opinion. I trust Dr. Newington will live to see the day, and I wish him, till then and afterwards, every happiness and good fortune—and a little more readiness to adopt new ideas, even if they emanate from your obedient servant,

London, N.W., March 11th. CHAS. MERCIER.

THE "MEDICAL WHO'S WHO."

SIR,—Our attention has been drawn to a paragraph in your paper referring to the above, in reply to which we have to state that the word "adequate" is used in the sense that no work exists to-day which gives, in our opinion, full and detailed particulars of medical practitioners. It is certainly not our intention to suggest that any of those books published in connexion with the medical profession are not representative in character or do not adequately cover the ground it is intended they should cover.

Your presumption that the *Medical Who's Who* is to contain only a selected list of practitioners is not correct, although we must confess that your impression is helped by the fact that the covering letter sent out with our circulars is so worded as to possibly create this impression.

We are therefore making the necessary alterations to our letter to remove any possible misunderstanding on this point. As a matter of fact we have been and are communicating with all medical practitioners on the *Register*, inviting them to send us the necessary particulars for our work, the invitation being free from conditions of any kind. Where particulars are not sent us we are, of course, unable to accept any responsibility for non-inclusion.

The work has already received very great support, and we are using every endeavour to make it as complete as possible.

In conclusion, let us say that we have entered on this undertaking with a full knowledge and keen appreciation of the necessary etiquette which surrounds the medical profession.

We trust that in fairness to us you will find room for this letter in your next issue.—We are, etc.,

THE LONDON AND COUNTIES PRESS ASSOCIATION, LTD.
(G. H. Cook, Managing Director.)

London, W.C., March 26th.

HYPODERMIC MEDICATION BY NURSES.

SIR,—Your correspondent "G. P." ought to write over his name. His letter, however, should suggest action and not mere notice. Nurses are generally acting the part of unqualified practitioners. The amount of business lost by the profession through them is incalculable. This is the direct outcome of the ridiculous curriculum allowed them. Their heads are turned—and no wonder they should be—with the little knowledge they are fermenting with. I know a Jubilee nurse who does a respectable fraction of the practice of a large district. Would it be possible for the General Medical Council to send down a man to investigate matters on the spot? The other course is too costly.—I am, etc.,

Cashel, Ireland, March 19th. THOMAS LAFFAN.

EXPLOSIONS IN COAL MINES.

SIR,—On page 566 of the issue of March 9th I notice some very interesting suggestions by Dr. Harger for the prevention of explosions in coal mines.

In short, Dr. Harger's method is to reduce the oxygen in the mines below that proportion which will support the combustion of candles and oil, but not below that which will easily support life.

I presume that his experiments have been carried out in the laboratory. But has it occurred to him that coal mines are dark, and the usual illuminant is from oil burnt in the safety lamp? I am not aware that electricity is in general use in coal mines yet, and owing to the danger of sparking at the terminals or switch contacts, I should imagine that electric lamps are not very well suited to those "dangerous" mines where his suggestions would be of incalculable value.—I am, etc.,

Bingham, Notts., March 17th. EDWARD BIGG.

A NATIONAL HEALTH WEEK.

SIR,—Will you grant me a few lines of your space to call the attention of those specially interested in public health to the work which is now being done in connexion with a National Health Week?

The main point underlying the idea is that the time has nearly approached when, if there is to be any further marked advanced in the hygienic condition of the people, the public conscience must be stirred as to the importance of personal hygiene; for example—cleanliness, rational feeding, and matters of this kind. There is not the slightest suggestion that in instituting a Health Week any criticism is to be made of the work done by the recognized sanitary authorities, the whole idea being that what is done will be supplementary to their work.

For a Health Week to be a success it is necessary for all who are interested in matters hygienic to give any aid they can to the project, and it is obvious that in those towns and districts where a Health Week is being observed, great help will be rendered to the movement if the medical profession generally give a strong support to the movement.

The main idea, therefore, of the celebration is to try and arouse an interest in the private individual in matters concerning his own and his family's health, to lead him to understand what infant mortality means and how it can be dealt with; to let him see how necessary it is for private effort to be added to public, in order that the great scourge of consumption may be properly dealt with. This and many other problems now awaiting solution can only be effectively dealt with by the whole-hearted co-operation of the private citizen.

I desire particularly to emphasize the view that we are not forming any new society. We are not clashing with any existing institute or authority. The committee is, in fact, mainly composed of officers of the leading health societies, nominated by those societies as their representatives. Any local Health Week celebrations will be under the control of a local committee, in which it is hoped that all sorts and conditions of people will join.

The first Health Week will begin on Sunday, April 28th. The extent to which it is observed will depend entirely on local conditions. It is hoped that the clergy will lend their aid by dealing with the subject in some way in a sermon on that day, and that other forms of celebration, such as towns meetings, lectures, or exhibitions, will subsequently take place.

As has been pointed out, we have no desire to do anything that may be termed sensational, but desire by steady and continued work to lead the public, not only in 1912, but in future years, to bear in mind what can be done by a united effort, in removing those hindrances to the enjoyment of good health which are still only too evident.—I am, etc.,

A. BOSTOCK HILL,
Chairman of the National Health Week Committee.
14, Temple Street, Birmingham, March 25th.

MOSQUITO DESTRUCTION.

SIR,—A typewriting error occurred in my letter of November 29th, 1911 (BRITISH MEDICAL JOURNAL, January 13th, 1912, p. 106). The strength of potassium cyanide advised by Professor Ross, and used in our observations, was 1 in 300,000, not one in three millions, as inadvertently stated.—I am, etc.,

J. S. C. ELKINGTON,
Brisbane, Feb. 19th. Commissioner of Public Health.

Obituary.

THEODORE LEIGHTON PENNELL,

M.D.LOND., F.R.C.S.ENG.,

C.M.S. MEDICAL MISSION, BANNU, N.W. FRONTIER, INDIA.

THE Medical Mission Department of the Church Missionary Society has received telegraphic information of the death from septicaemia on March 23rd of Dr. Pennell of Bannu.

T. L. Pennell was a man not easily forgotten by any who had the privilege of coming in contact with him, whether as a student or as a missionary. He was over 6 ft. in height and of striking personal appearance, and his conspicuous abilities marked him out as one who would take the lead wherever his lot might be cast. Dr. Frederick Roberts said of him, writing on January 2nd, 1891, "Mr. T. L. Pennell has been the most distinguished student of his year, and is in every respect a noble character"; and Sir Thomas Barlow, writing at the same time, said, "He has taken a distinguished place in his collegiate course, and, what is of more importance, in the medical degree examination in the University of London he has taken a very good position indeed." The following record of the distinctions which he obtained show that the opinions expressed were more than conventional testimonials. In 1885 he obtained the Medical Entrance Exhibition at University College, London, and in 1889 he secured the Atchison Scholarship, the Bruce Medal, and the Liston Medal. In 1890 he obtained the Atkinson-Morley Scholarship and the M.B. degree with honours, scholarship, and gold medal. In 1891 he took the M.D. degree and obtained the gold medal, and in 1892 he became F.R.C.S.Eng. This examination record in itself betokens no small ability, and when it is realized that all this was attained without any appearance of strain or stress a tribute to his powers is all the greater.

How it came about that Pennell took up the missionary course and afterwards went abroad as a missionary may be told very briefly. His father was a gifted medical man and practised in Brazil, but he died whilst his only son was an infant. The boy's education was therefore in the hands of his mother, who was proficient as a linguist, and who devoted her whole life to the education and encouragement of her son in all his various experiences. The work of a missionary was set before him from boyhood as the highest career which he could undertake, and lives of great missionaries and explorers deepened the missionary enthusiasm which had been implanted by his mother's training. He longed to go abroad with the least possible delay, and it was his mother's prudence which led him to take up the medical course. After his schooldays were over at Eastbourne College he entered University College, London. His career there was one of unbroken successes, as has been already stated, but, in addition to his professional work, he was Secretary of the University College Christian Association, which he represented on the Medical Prayer Union, and also took a prominent part in the University College Working Lads' Institute. In 1892 he went out to India as an honorary medical missionary under the Church Missionary Society, and was at first appointed to the existing Medical Mission at Dera Ismail Khan. In 1893 he was transferred to Bannu, on the North-West Frontier of India, where he had the responsibility of opening up a medical mission.

Bannu has a position of strategic importance when viewed as a means of influencing the "wild tribes of the Afghan Frontier"—a phrase which formed the title of a fascinating volume by Dr. Pennell, to which a preface was written by Lord Roberts, whose interest in the work is a good indication of its importance. It was to influence these tribes that Pennell gave his life, and he became the best friend of a very wide circle drawn from very diverse surroundings. From very small beginnings he developed a splendid hospital work, having in-patient accommodation for 90 patients, with a total number of 1,309 in-patients during 1910 and 67,294 visits of out-patients. He did a considerable amount of operative work, including about 300 operations for cataract in a year, and his wards were often filled with tribesmen who had fought with one another, and who found themselves when wounded occupants of the same ward in a Mission Hospital. Some of his happiest experiences were during visits paid to the surrounding tribes, among whom he was always welcome, and he gained their confidence so largely that he would go where few others would have dared to venture. The Government of India recognized his work and influence by conferring upon him in 1903 the Kaisar-i-Hind medal of the second class, and in 1910 the Kaisar-i-Hind medal of the first class.

His friend, Dr. Arthur Neve, also a Kaisar-i-Hind medallist, recently told the following story of a visit to Dr. Pennell's district. He said:

> I remember bicycling out from Bannu one night, and when I got, perhaps, a little beyond the frontier I came across men with guns and began talking to them. Presently I said, "I come from the hospital." "What hospital?" "Dr. Pennell's hospital." "You must come and stay with us for the night. We will make all your food; we will make you comfortable; of course he is our friend." I have been told by a military man in high position in India that Dr. Pennell is worth a couple of regiments to the British on that frontier any day.

Besides his medical work Pennell was a keen educationalist, and had charge of a large boys' school. He was a strong believer in the value of athletics in the development of character, and the boys of the Bannu High School have obtained a great reputation for athletic prowess. On one occasion Pennell took the school football team for a tour in North India, playing matches with the various mission schools and colleges which they visited. This is a side of mission work which is not often known, but it is worthy of note that some of the most successful educationalists in connexion with missions have recognized the fact that especially amongst the Indian races the proper use of athletics has served to strengthen the moral backbone, which is often conspicuously weak, and has been an important auxiliary to Christian teaching.

Dr. Pennell's mother accompanied him to the mission field, and devoted herself there, as she had previously done at home, to the support of the various works in which her son was engaged. Like him, she desired to identify herself with the country to which she had gone, and largely on her account Dr. Pennell did not return to England until he had been nearly sixteen years in the field. After the death of his mother in 1908 he married Miss Alice M. Sorabji, B.Sc.Bombay, M.B., B.S.Lond., who heartily shared in his medical work, and the building of a special zenana ward had been decided upon only last week in order that the efficiency of this branch of the work might be increased. These notes might fitly close with an extract from an address presented to Dr. Pennell by the citizens of Bannu, Mohammedan and Hindu alike, on his return to England in 1908. It is as follows:

> As a medical man we cannot too highly praise your selfless devotion to our welfare. Without regard to any inconvenience to yourself you have been ready to attend to any call, whether from rich or poor, at all hours of the day and night. The arrangements in the Afghan Mission Hospital for the indoor patients are excellent, and the outdoor patients are treated with no less sympathy and kindness.
>
> In order to be able to freely mix with us you have ever since your coming here adopted the costume of an Afghan. You have been joining our social gatherings, you have been moving amidst us as if you were one of our own kith and kin. Above all we appreciate and cannot too highly admire your efforts in bridging over the gulf that divides the Europeans and the Indians. It is the men of your stamp that are mostly needed.

We cannot sufficiently praise the manifold qualities of your head and heart, but suffice it to say that your purity of character, nobleness of mind, and broadness of sympathies have made a home for you in the heart of every Hindu and Mohammedan, rich or poor, young or old. To see you is to love you, and to know you is a pleasure. We bid you adieu, and pray for you a happy voyage home. We shall be fondly looking for the day when we shall welcome you back in our midst.

His loss might well be spoken of as irreparable, but it is hoped that this story of the influence of one medical man upon a large territory in one of the outposts of the British Dominions may lead other medical practitioners to consider the possibility of entering a service in which the highest gifts may be used to the best advantage.

A telegram received by the Church Missionary Society on March 25th, makes the following appeal: "Publish widely Frontier appeals England fill gaps in fighting line." The Church Missionary Society will be glad to hear from any medical men who, imbued with the spirit of Dr. Pennell, would like to follow in his footsteps.

Mr. DEVEREUX MARSHALL writes: Theodore Leighton Pennell and I entered University College, London, as students in October, 1885. He had previously passed the Preliminary Scientific examination of the University of London, and in October of that year he obtained the highest entrance exhibition. We got to know each other within the first few days, and thus commenced a close friendship which lasted unimpaired until the day of his death. His ability to do well in examinations was marvellous. It was seldom that he ever entered for one without coming out at the head of the list. The number of medals and prizes which he obtained could certainly not be held in memory by even his closest friends. Yet, in spite of this, he was not by any means a plodder who obtained distinction solely through hard work at medical subjects. He always had plenty of time for everything, and I never remember his looking pale and worried by overstudy. Physically he was not particularly strong, but the amount of work he could get through was prodigious; yet it never disturbed him, and he was one of those who appeared able to grasp a subject in detail before most of his contemporaries were able to get hold of the bare outlines. He always found time for work outside that which was strictly professional. He was a keen entomologist and botanist, and from the very first took charge of the destinies of the Students' Christian Association, and made it flourish in his day. When about half-way through his student days, he had an eye on the working lads in the Euston Road district, and, with the aid of a few others, started and worked a boys' club and gymnasium, which for years continued to be a counter attraction to the streets for the lads who joined it. For the management of this he was almost entirely responsible, and that at a time when final examinations were looming very large on the horizon. This did not worry Pennell in the least; he went up for them at the earliest possible time and seldom came away without an exhibition or gold medal to show for it, and finally he obtained the gold medal at the M.D. A year later he became an F.R.C.S.

It was impossible to imagine that he could have anything but a distinguished career no matter where he went, but he at once decided that he should spend his life in the mission field, and offered himself to the Church Missionary Society.

His devotion to his mother was remarkable, and I am quite certain that nothing would have induced him to leave her. The solution of this difficulty was found in their both going together to Afghanistan in 1893. There for fifteen years they worked together without either of them ever coming home. At the end of that time he came home for a short time in the summer, and then underwent an operation for the removal of a loose cartilage in his knee. To his great sorrow his mother died quite suddenly, while he was in England. Shortly afterwards he married in India; he returned again about two years later with his wife (who was an M.B. and B.S.Lond.) on sick leave, he having had a most severe attack of enteric fever. I last saw him in the summer of 1910, when he was convalescent, but he bore the traces of the hard life he had lived. There are others who are better able than I am to describe his work in India, and that I will not attempt, but we knew enough of each other to mutually watch our progress, and many a time have we consulted together by letter on strange cases which we have come across. There are a few men we have all known who have made the world brighter and happier by their lives, examples, and friendship. Pennell was one of those, and his influence for good was fully recognized by the Government of India, by thousands of natives, as well as by his friends in England. The loss of such a man as Pennell is a very serious matter indeed, not only to his intimate friends, but to the world at large.

Dr. S. H. SNELL, of Christchurch, who was a fellow-student of Dr. Pennell's at University College, in the course of a tribute to his memory, writes: In those early days the deeply religious bent of Dr. Pennell's mind was plainly shown, and he formed and took a deep interest in a working boys' club in Tottenham Court Road. A great deal of his spare time and cash were devoted to these objects, while on himself and his clothes he spent little, so that he had the reputation of being a poor man, though this, I understand, was really not the case. In residence as House-Surgeon, etc., in University College Hospital he was very highly respected, though, like all men who are known to be "religious," was subject to a little good-humoured chaff at times. Twenty years passed over our heads. I heard rumours of his magnificent work, saw an occasional letter from his pen, and then appeared his work, more interesting than any novel, *Among the Wild Tribes of the Afghan Frontier*. One day, at a garden party at Guy's Hospital the summer before last, I saw a man, bearded and bronzed and thin, walking with a Parsee lady. We looked and recognized each other. This was Dr. Pennell and his wife, who shared his life's labour with him. A grip of the hand, a ten minutes' eager talk, a promise to meet in a few days, which was accidentally prevented, and now all that is over for ever, and only the memory of pleasant friendship and eager, strenuous student days together remains. That so talented a man, who could have attained to any position in England, should devote his life in such a way is proof of his wonderful faith, and even those of us who cannot share those ideals must reverently admire and respect the unselfish devotion of his life to a great and noble cause.

Dr. WILLIAM HENRY BARNETT, who, like Dr. Pennell, died of septicaemia at Bannu on March 20th, at the age of 32, was in his first period of service in the mission field, where he was the colleague of Dr. Pennell. As a student at St. Bartholomew's Hospital he had a successful career, and made many friends, and at the end of his course he graduated M.B., B.S.Lond. in 1905. He served two appointments before going abroad, first as House-Surgeon at the Macclesfield General Infirmary, and later as House-Physician at the Radcliffe Infirmary, Oxford. He had already done useful work in Bannu, and he will be greatly missed. He married on September 26th, 1910, Miss P. L. Hockin.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

The following degrees have been conferred:

M.B.—A. H. Richardson, C. A. Dottridge, R. M. Miller.
B.C.—A. H. Richardson, C. A. Dottridge.

UNIVERSITY OF LONDON.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

THE Council has received the sum of £1,500 from an anonymous donor to clear off the debt upon the building.

The Council also received from Mr. H. M. Phipson the sum of £100 to endow a prize in pharmacology in memory, and to bear the name, of the late Dr. Edith Pochey Phipson.

The Gilchrist Studentship for Women of £100 has been awarded by the University of London to Miss Cicely M. Peake, M.B., B.S.Lond., a former student of the school.

The St. Dunstan's Medical Exhibition, value £60 per annum for three or five years, and the School Scholarship, value £30, will be awarded on the result of an examination to be held on May 28th and following days. Forms of entry must be sent to the Secretary of the School, from whom all particulars can be obtained, before May 20th.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examinations indicated:

SECOND M.B., CH.B.—*Part A:* H. G. Bywater, B. J. Doyle, J. J. K. Pentony, R. Rimmer. *Part B:* G. D. Harding, B. Williams.

FINAL.—*Part I:* Maud E. Bateman, F. A. Belam, R. W. Gemmell, A. V. Glendinning, E. B. Marsh, A. C. Mooney, H. S. Pemberton. *Part II:* D. H. Clarke, Kate M. Cowe. *Part III:* Ethel M. Baker, R. C. Crooke, A. A. Dear, I. C. Edwards, T. B. Evans, N. P. Laing, *J. Loudon, G. W. Mooney, H. Pierce, H. G. Roberts, J. A. Tobin.

* Second-class honours.

UNIVERSITY OF BIRMINGHAM.

THE following candidates have been approved at the examinations indicated:

D.P.H.—*Part I:* R. W. Briggs. *Part II:* E. J. Boome.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examinations indicated:

FIRST M.B.—*Elementary Anatomy and Biology, Chemistry and Physics:* R. V. Brew, W. J. H. Brown, A. C. Jap, C. W. Morris, H. A. Newton, A. E. Raine. *Elementary Anatomy and Biology:* J. Brumwell, Dorothy Butcher, Mary R. Campbell J. A. Charles, G. A. Clark, R. N. Craig, D. E. Hearn, W. A. Hewitson, J. Horsley, R. Hunter, J. K. R. Landells, Phyllis Marriott, C. D. Newman, G. F. Philip, K. I. Shalaby, T. W. Shaw, W. O. F. Sinclair, J. T. Smith, I. Soliman. *Chemistry and Physics:* H. G. B. Dove, L. B. Frere, C. N. Joseph, E. E. D. Lau, R. B. Pirrie, J. D. Proud, W. A. Tweddle. *Elementary Anatomy:* H. Williamson, R. Welch.

SECOND M.B.—*Anatomy and Physiology:* *W. Stott, *C. H. Keay, *W. Herbertson, P. A. Clements, A. F. R. Dove, Mary S. Gordon, L. Magee, G. D. Newton, R. Sells, C. G. Strachan, A. G. Taylor.

* Second-class honours.

Medico-Legal.

CONTRACTS WITH LOCUMTENENTS.

WITH reference to the case briefly recorded, under the heading of "Contract with Locumtenents," at page 650 of our issue for March 16th, the defendant's solicitor and one of the medical agents who gave evidence on behalf of the defendant have both been good enough to supply further information. The case, however, was only of interest so far as it illustrated the working of general principles, so we merely note that whereas the medical agent seems to have regarded himself as testifying to what is the established custom in respect to giving notice to locumtenents, the solicitor regarded him as giving evidence on the specific point of what notice is required when a locumtenent is unable to perform his work through physical incapacity. It was on the latter point that the case eventually turned, the judge holding that a locumtenent engaged for a definite period contracts to perform certain duties day by day, and that if he is unable to perform those duties his engagement *ipso facto* terminates, even when the cause of the inability is illness or injury. On the question of what notice is due to, or by, a locumtenent who is not engaged for a definite period, and who has signed no contract by which the point is covered, the case, as we before indicated, establishes no precedent.

Public Health

FEES FOR CERTIFICATION OF PAUPER LUNATICS FOR ASYLUMS.

J. K.—Our correspondent has not stated his case quite clearly, but we may say that we have not before heard of a magistrate naming such a fee as 5s. as a proper fee for the serious and responsible duty of certifying a lunatic as fit to be removed to an asylum. We believe that the usual fee is a guinea. As our correspondent has certified numerous cases without any definite understanding as to what he might expect to be paid, his only redress would seem to be to appeal to quarter sessions under Section 301 of the Lunacy Act, which is as follows:

> 301. (1) Any person aggrieved by the refusal of an order by any justice or justices as to any matter within the jurisdiction of a justice or justices under this Part of this Act, may appeal to a court of quarter sessions upon giving to the justice or justices against whom the appeal is made fourteen clear days' notice of appeal.
>
> (2) The determination of the court upon the appeal shall be final.

PUBLIC HEALTH ADMINISTRATION.

SCOTTISH MEDICAL OFFICER.—(1) The provisions of the Public Health Act must be carried out by the local authorities, however irksome they may appear to our correspondent. (2) The cases referred to being, in the opinion of the district medical officer of health and in that of the medical officer of health for the county, typhoid fever, our correspondent should have attended. His diagnosis of cerebro-spinal meningitis may have been open to doubt; the fact of the Widal test being negative does not amount to proof that the disease was not typhoid. (3) As cerebro-spinal meningitis is not listed as a notifiable disease under the Act, our correspondent is not entitled to a fee for notifying this disease. (4) If the district medical officer of health is willing to provide and pay for a nurse to attend these cases, surely our correspondent would not object to having the services of a nurse.

Medical News.

DR. CARL POSNER, editor of the *Berliner klinische Wochenschrift*, and a well-known specialist in genito-urinary diseases, has had conferred upon him the title of Medical Privy Councillor.

AT a meeting of the Royal Sanitary Institute, at 90, Buckingham Palace Road, on Wednesday, April 24th, Dr. F. W. Mott, F.R.S., will deliver a lecture on Sanity and Insanity. The President, the Duke of Northumberland, will take the chair at 5.30 p.m.

THE report adopted at the annual meeting of the Royal Dental Hospital of London on March 14th recorded the admission of the institution to the position of a school of the University of London, its recognition for the teaching of chemistry and physics by the Conjoint Board, and the success of the public lectures at the hospital on the care of the teeth instituted last year.

THE report of the 139th anniversary meeting of Leicester Infirmary on March 20th includes a record of the adoption of a resolution recording the gratitude of the governors to Dr. F. M. Pope for the eminent services rendered by him to the institution and the children's hospital in respect both of administration and of attendance on patients. The resolution also asked his acceptance of the post of consulting physician, and expressed a hope that he would continue to take a prominent part in the guidance of the affairs of the joint institutions. Dr. Pope is about to resign his appointment on the active staff after a period of service extending over twenty-six years.

AT the annual meeting of the Chelsea Hospital for Women on March 25th, the President, Viscount Castlereagh, stated that the rebuilding scheme would now be put into operation. It includes transfer of the institution to a new site not far off, where there will be room for more beds, and for proper accommodation of the nursing staff, and freedom from noise. The new site has been presented to the hospital by Earl Cadogan, while Mr. Dyer Edwards has foregone a mortgage of £4,000 on the present site, so as to allow it to be sold free of incumbrances. The trustees of the Zunz bequest have promised a grant of £10,000 towards the expenses. These it is estimated will amount to about £43,000.

THE fifteenth annual dinner of the Chelsea Clinical Society was held at the Richelieu Hotel, Oxford Street, W., on March 20th, the President, Dr. J. A. Mansell-Moullin, in the chair. The visitors included Professor Einthoven, of Leyden; Dr. A. Waller, F.R.S., Professor of Physiology at the London University; the Mayor of Chelsea, and others. The President, in proposing the toast of "The Chelsea Clinical Society," mentioned that during the year there had been a large accession of membership. The difficulty of securing a place in which to hold meetings had been overcome, thanks to the courtesy of the authorities of St. George's Hospital, who had placed the club rooms at the disposal of the society. He wished to take the opportunity of thanking the medical staff for this privilege and for providing them with clinical cases and placing the laboratories at their disposal. Dr. Theo. B. Hyslop responded in a humorous speech, and commented on the progress the society had made. Discussions of the greatest value were held from time to time, and the attendances had shown a considerable increase. Dr. T. W. Parkinson, who submitted the toast of "Our Guests," referred to Dr. Waller as the father of electro-cardiography, and complimented Professor Einthoven on having brought about its practical application. It was a great pleasure to have visitors from abroad; in medicine they acknowledged no nationality. Professor Einthoven gracefully responded; and Dr. Waller, who was also called upon, remarked that though he had been called the father of electro-cardiology, he felt like a child by the side of Professor Einthoven. He (Dr. Waller) had not dreamed of the instrument being more than a scientific curiosity, or that it would be placed in the hands of doctors in the way it had been. It had been shown, however, that there was a magnificent future before the instrument as a means of clinical investigation. The Mayor of Chelsea and Dr. E. I. Spriggs, on behalf of the Dean of the Faculty of St. George's Hospital, also replied. The toast of "The President and Officers of the Society" was proposed by Dr. Campbell Boyd and acknowledged by the Chairman, by Dr. Allpress Simmons, and by Dr. Ivan Maclean.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

INGLESE, who speaks Italian, wishes to hear of an *albergo* in Rome with restaurant where pension can be obtained for 6 lire a day.

G. B. desires information regarding the styptic properties of the giant puff-ball (*Lycoperdon giganteum*). Beyond what he has got from Whitla's *Pharmacy* and an account of experiments made with it on horses in 1755, he has gleaned little.

HAIR DYE, who has used a bismuth soluble salt and sod. sulphide applied in two separate solutions, as described in the BRITISH MEDICAL JOURNAL, finds the dyeing power feeble, and asks for suggestions for something more positive.

BUDE asks if any member of the Association could personally recommend a good pension or villa at a quiet little place in the South Malo or Dinard district, quite close to the sea, where safe bathing is obtainable. He also inquires whether such a holiday could be got at an expenditure of about 7 or 8 francs a head in July or August.

THE MIMICRY OF PHTHISIS BY HYSTERIA.

DR. EDWIN ASH (London, W.) writes: I am much interested in a certain case commented upon by Dr. March and Dr. Hitchcock under the above heading in your issue of March 9th, as I have been investigating the circumstances thereof. As this case is partly interesting from the point of view of diagnosis, I should be very much obliged if either of those gentlemen or any other medical practitioner who had any opportunity of observing the girl in question during the course of her long illness, would inform me, either directly or through your columns, as to any physical signs or symptoms of hysteria which they may have observed, and upon which they may have based such an opinion.

INCOME TAX.

R. has claimed as a deduction in arriving at his profits for income-tax purposes the sum paid to a locumtenent for his services. The surveyor refuses to allow this deduction, referring our correspondent to the case of Lothian *v.* Macrae.

*** The cost of a locumtenent should be allowed as an expense of the practice on precisely the same ground as in the case of the cost of an assistant. The case of Lothian *v.* Macrae is not in point. The subject of assessment there was the income derived from an ecclesiastical appointment, and the decision was that voluntary contributions made from the stipend to a second person in order to obtain relief from performance of the duties did not constitute a deduction for income-tax purposes, inasmuch as the holder of the office could recoup himself by deducting income tax from the portion of the stipend handed over. Professional profits are on an entirely different footing, and charged under a different schedule of the Income Tax. There is no question of a "voluntary payment" in the case of a locumtenent; the expense is an ordinary expense necessary to the earning of the profits of the practice, and should be allowed.

DISPENSARY KEYS.

MR. W. B. FITCH.—(1) As far as we are aware, it is not customary for the matron of a hospital to be habitually in possession of a key of the dispensary door or to place one in her charge, except during such time as may be necessary either for sweeping the dispensary or for lighting the dispensary fire. (2) We should not advise the introduction of any such custom, because if it existed it would be impossible to fix on the dispenser the responsibility for the control of dispensary stores, and, in the event of the accidental or other misuse of drugs, the question of determining who was to blame would be complicated. (3) If the dispenser is not a resident officer, the best plan is to place in the house officer's room a small supply of every drug likely to be required in an emergency, the key being in charge of the house officer on duty. (4) The only drugs kept in wards, cupboards, or in charge of any member of the nursing staff should be such aperients and other common remedies as the nurses may possibly be authorized by the medical staff to use without specific instructions.

ANSWERS.

MEDICUS ACROSS THE SEA writes: "G. W. K. C." may be interested to hear that in the country from which I write, which has always been famous for its wines, there has been from time immemorial a widespread belief amongst wine makers and those in charge of wine cellars that women must on no account be admitted when menstruating, as the wine would be sure to turn. This belief is so firmly rooted that as a matter of course no women are allowed into cellars where barrels of wine are kept.

FLATULENCE.

Dr. H. J. THORP (Ipswich) writes: In reply to "X." for treatment of flatulence: Ammon. bromid. grains x, tinct. sumbul ℥ ss, tinct. lupuli ℥ ss, aq. camph. ℥ j, to be taken at 12 and 6 p.m. Change of environment if possible.

LOCOMOTOR ATAXIA.

M. B. O.—Dr. J. A. Ormerod in his article on tabes dorsalis in Allbutt and Rolleston's *System of Medicine* has the following observation:

> Another great factor in the etiology is *sex*. Men suffer in a far larger proportion than women. The reason of this we do not know, nor how to reconcile it with a purely syphilitic etiology. As to age, the disease commonly manifests itself first in the fourth or fifth decade of life, though there may be exception to this, and a close inquiry into early symptoms may carry its origin farther back than was suspected. But probably the date of onset depends upon the age at which syphilis has been acquired rather than upon the actual age of the patient. The average interval between the infection with syphilis and the outbreak of tabes is given by Dr. Ferrier as seven to ten years, by Dr. Mott as eight to fifteen years; but, doubtless, it may exceed or fall short of these limits.

There does not seem to be any evidence that the mode in which syphilis is contracted has any influence on the subsequent occurrence of locomotor ataxia.

LETTERS, NOTES, ETC.

A WARNING.

S. C., who resides in a suburb of London, writes to suggest that any medical practitioner who may be called upon by a man some 30 or 35 years of age, tall, fair, and well built, offering his services as a masseur or chiropodist and manicurist, should be on his guard to ensure that the services offered will be in fact rendered.

THE NEW CELL PROLIFERANT.

MR. BERNHARD SMITH, L.M.S.S.A. (author of *Poisonous Plants of all Countries*) (London) writes: Anent the correspondence on the common comfrey (*Symphytum officinale*), I should like to say that I have come across the following lines in the poems of Beaumont and Fletcher:

> I must have this bleeding staid.
> From my banks I pluck this flow'r
> With holy hands, whose virtuous pow'r
> Is at once to heal and draw.

One other species of the genus *Boraginaceae* known to have active properties is our common hound's tongue (*Cynoglossum officinale*), which contains an irritant oil.

HUMPHREY PAINTER, SERGEANT-SURGEON TO CHARLES II.

DR. S. D. CLIPPINGDALE (London, W.) writes: All accounts of Painter are silent as to the time and place of his death. It may therefore be useful to record the following entry taken from the burial register of St. Mary Abbott's, Kensington: "1672, February 17. Humphrey Painter, esquire, ye King's Sergeant-Chirurgian."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

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